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SARCOID AND SYPHILIS *

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Since the description of multiple benign sarcoid by Boeck [1] in 1899, and the gradual restriction of the name to the disease described by him, followed in 1904 by the addition of the subcutaneous type,[2] the tuberculous etiology of these conditions has been the only one finding any considerable acceptance. Their connection with tuberculosis has been based mainly on their histologic resemblance to tuberculosis of the skin. In addition, the superficial type has some clinical resemblance to lupus vulgaris, and the deep variety approaches erythema induratum in its clinical appearance at times. The considerable resemblance between superficial sarcoid and lupus erythematosus cannot be cited in this connection, as the latter is itself in the same position etiologically as sarcoid. Few cases of sarcoid have shown a local reaction to tuberculin or improvement on tuberculin therapy. Inoculation of guinea-pigs with portions of the tumors has been done in many cases, rarely with success.[3] In the thorough attempt of Kren and Weidenfeld [4] to obtain this confirmation of the tuberculous nature of their case, twelve pigs were inoculated, and after from one to two months showed neither a reaction to tuberculin nor any sign of tuberculosis at necropsy.

In no case has there been recorded the demonstration of undoubted tubercle bacilli. Many cases have had a family history of tuberculosis or tuberculous foci in other parts of the body, but in the light of the great frequency of such, they do not carry much more weight than the fact that in many cases of sarcoid no such lesions can be found, nor any such history elicited. While the evidence, therefore, of their relationship to tuberculosis seems slight, it must be granted that such is also true with some of the accepted tuberculids, in which bacilli are seldom found, inoculations seldom successful and local reactions to tuberculin often wanting.

Pautrier, in 1914, reported two cases, one of multiple benign sarcoid of Boeck, the other of the Darier-Roussy variety, in both of which the Wassermann reaction was strongly positive, and both of which yielded promptly to antisyphilitic treatment:

The first case was that of a woman, aged 24, who had had for two months nodules on both sides of the bridge of the nose, gradually increasing in size. On the right side was a flat nodule a little larger than a 50-centime piece, irregularly oval, with the long diameter vertical. The border of this lesion was slightly elevated, especially at the top and bottom, with a slightly warty, grayish yellow surface, not scaly. The center was rose red, with an interlacing network of deeper red dilated blood vessels.

The lesion on the left side was even more sharply defined and showed signs of beginning regression. It was the size of a 2-franc piece, and consisted of papules from 2 to 3 mm. in diameter, firm, reddish yellow, with a slight infiltration. The center was like that of the other lesion. Histologic section from the larger nodule revealed thinning of the epidermis, and, in the true skin, "puddings" and "sausages" of infiltrate, some localized about the follicles and sebaceous glands, some independent. They were made up largely of epithelioid cells, with only a few fixed connective tissue cells and lymphocytes and a very few giant cells.

The serum of this patient gave a strong positive Wassermann reaction, and one dose of neo-arsphenamin caused a marked improvement in the sarcoid within eight hours, only a slight infiltrate and some central redness and telangiectasis being left. A general examination of the patient revealed typical serpiginous syphilids on the right forearm and both thighs, and a history was obtained of a syphilitic infection six years before the examination. Further treatment with neo-arsphenamin caused the disappearance of all these lesions, leaving only part of the central telangiectasis to mark the site of the sarcoids.

The second case of Pautrier was that of a man, aged 35, on whose left arm, six months before coming for treatment, deep nodules had appeared and had slowly increased in size. On examination, a mass 10 cm. in vertical diameter and 5 cm. wide was seen opposite the acromion process. It was hard and was adherent to the muscles and at two points to the skin. The skin was of normal color and texture except at these two points, where it was reddish violet and showed punctate depressions like those in orange skin. On the lower posterior surface of the same arm was a second node the size of a pigeon's egg, slightly adherent to the somewhat reddened overlying skin. In the left subspinous fossa was a gumma as large as a 5-franc piece. It had a central ulcer "in every respect like a scrofulotuberculous ulcer."

For two years the patient had had an area of consolidation in the apex of the left lung. Biopsy of one the deep nodes revealed an infiltrate in round or irregular masses, few and small in the upper corium, larger and more numerous in the lower corium and subcutaneous layer. In the latter location, typical "growth atrophy" was seen, the fat cells replaced by infiltrate. Epithelioid cells made up by far the greater part of this infiltrate; many giant cells were present, and few lymphocytes and connective tissue cells. Inoculation of guinea-pigs with tissue from the deep nodes and the gumma was without result.

* Read before the Section on Dermatology and Syphilology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

* This paper and those by Drs. Brown and Pearce, Irvine and Fraser, which follow, are part of a symposium on Syphilis. The remaining papers, together with the discussion, will appear next week.

1. Boeck, C.: Multiple Benign Sarcoid of the Skin, J. Cutan. Dis. **12**: 543, 1899.

2. Darier, J., and Roussy, J.: Des sarcoïdes sous-cutanées, Ann. de dermat. et de syph., 1904, pp. 144 and 347.

3. Volk: Wien. klin Wchnschr. **26**: 1425, 1913.

4. Kren, O., and Weidenfeld, S.: Ein Beitrag zum Lupoid (Boeck), Arch. f. Dermat. u. Syph. **99**: 79, 1909.

The patient was lost sight of, and after two years returned, with the ulcerated gumma and the upper mass on the arm in the same condition as when first seen, but with a remarkable change in the lower node. It had grown to cover an area 15 by 10 cm., had become adherent to the muscle and skin "and perhaps to the bone," and had become dull red in seven or eight places, where fluctuating nodes had formed, three of which were discharging a thick, clear yellow fluid.

Sporotrichosis was now suspected, but cultures on sugar mediums were negative. Roentgenograms did not reveal any bone change. The Wassermann reaction was strongly positive. Because of the known action of arsphenamin on some tuberculids, the action of calomel on some sarcoids and of iodin on the mycoses, mercuric benzoate in doses of 0.01 gm. intramuscularly was the only medication. After two series of injections, fifteen in each series, all lesions had become nearly clear.

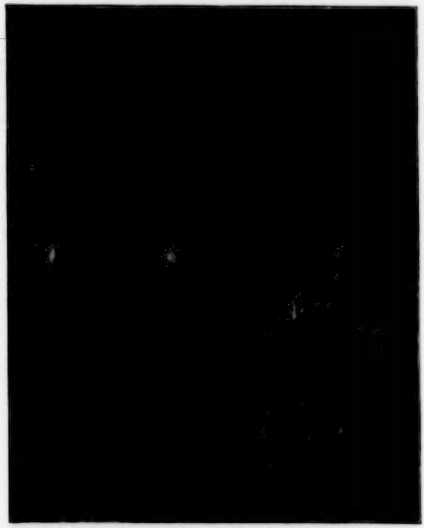

Fig. 1.—General view, elastic tissue stain.

The diagnosis of sarcoid made at the time of the first examination was accepted by Darier, Brocq and Thibierge. Pautrier feels justified in classing as syphilitic rather than tuberculous a lesion that occurs in a patient with a positive Wassermann reaction, and heals on injections of mercuric benzoate. He concludes that sarcoid is of varying etiology, sometimes syphilitic, sometimes tuberculous, perhaps sometimes of still other etiology.

Against these views, Civatte and Vigne[5] have recently presented the report of a typical case of Boeck's sarcoid studied by them. The patient gave no history or signs of tuberculosis, but said that her husband had chronic bronchitis. She gave a general reaction to 4 drops of a 1:1,000 dilution of tuberculin, but there was no local reaction. The Wassermann reaction was negative both before and after the injection of neo-arsphenamin. The histologic picture showed more lymphocytes in the upper corium than is usual in sarcoid, and in places signs of degeneration. After three injections of neo-arsphenamin the lesions disappeared clinically, but a second biopsy revealed persistence of the deep foci, only the lymphocytes in the papillary layer having yielded to the treatment. Their experience has shown that syphilids show considerable changes in histologic structure after one dose of neo-arsphenamin, while this sarcoid, which was clinically well after three doses, still persisted histologically. This argues, they think, rather against than for its syphilitic etiology.

At a recent meeting of the French Society of Dermatology and Syphilography, Laplane[6] presented a woman, aged 51, with a subcutaneous tumor 16 cm. long and 2 cm. thick, in the upper part of the right calf. Its consistency was between that of a sarcoma and that of a fibroid; the mass was adherent to the muscles in places and also in part to the skin, which was lilac color over part of the surface, and normal skin color over the rest. The orange skin phenomenon was noted in places. This tumor had been developing slowly for seven years. It was slightly tender. Another node, nut size, was round on the inner surface of the lower part of the thigh, the skin over it being adherent and violaceous. The inguinal glands on the same side, both vertical and horizontal groups, were large and tender. There was no genital lesion to account for these glands. Histologic examination of the large mass revealed an infiltrate composed of epithelioid cells, giant cells and lymphocytes forming typical tubercles in places. The infiltrate formed a thick band between the corium and the hypoderm, and in places showed considerable necrosis without caseation. The patient had latent apical tuberculosis, reacted to tuberculin given subcutaneously, and had a strongly positive Wassermann reaction. Tuberculin therapy for two months had not improved the lesions, but they cleared up promptly on neo-arsphenamin, leaving some infiltrate, probably a scar.

REPORT OF CASE

In April, 1919, a janitor, born in Germany, aged 40, was referred to me by Dr. Willard Brode of Chicago. He had been in the German navy, and when in Africa, about 1909, had had blackwater fever. A blood test at that time was negative. He had never, to his knowledge, had a genital sore or a skin eruption. During the winter of 1918-1919 he had lost considerable weight without any apparent cause. In December, 1918, a hard mass the size of a half dollar (3 cm.) appeared suddenly under the skin on the inner side of the right elbow, followed soon by several smaller lumps on the back of the arm, and then a deep, hard mass appeared about the middle of the inner surface of the right leg. For many months before these lumps appeared, a tender swelling had been present on the right shin, following an injury. This was the only tender lesion, and there were no other subjective symptoms.

Examination of the chest gave no indication of a pathologic condition, but the roentgenogram showed slight linear shadows radiating from the hilum on both sides, and several small punctate shadows. The shadow of the aorta showed decided dilatation. The abdomen showed no abnormality, blood counts were normal, and the Wassermann reaction was strongly positive.

About the middle of the right shin was a fusiform, hard swelling, tender on pressure, adherent to the bone, the skin over it brownish red. On the inner surface of the same leg at the junction of the middle and upper third was a flat, round mass about 6 cm. in diameter, adherent to the skin.

5. Civatte, A., and Vigne, P.: A propos du traitemant de le sarcoid de Boeck-Darier, Ann. de dermat. et de syph. 1: 254, 1920.

6. Laplane, L.: Un cas de sarcoide hypodermique de la jambe, Bull. Société franç. de dermat. et de syph., 1921, No. 3, p. 75.

and at its lower border to the deep tissues. On palpation it felt as hard as cartilage, the border uneven. At the upper border the cake, which seemed about 1 cm. thick, could be lifted by the fingers under its edge. The skin over the slightly depressed center was brownish red, with a pale violaceous ring about it, and the skin beyond this of ordinary color.

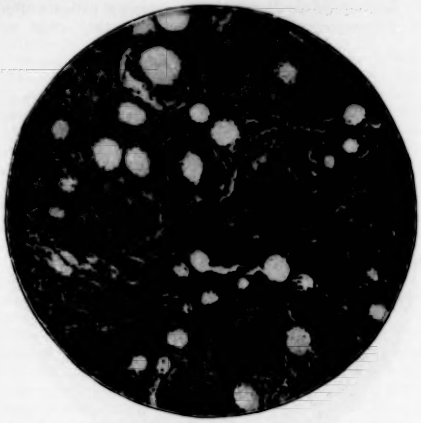

Fig. 2.—Detail of infiltrate especially rich in round cells, showing a giant cell replacing a fat cell.

On the internal surface of the right arm just above the elbow was a partial ring of pink to light red papules with convex tops, moderately hard. Within this ring, which was about 4 cm. in diameter, the skin was a pale bluish red, and under it the tissues gave a feeling of soft infiltration without any definiteness. At the middle of the posterior surface of this arm were five nodules, the largest about 1 cm. in diameter, forming part of a small circle deep under the skin. In other places on the posterior, inner and outer sides of the arm were six more deep nodules, from 0.5 to 1.5 cm. in diameter, of cartilaginous consistency, visible only by the dimpling of the skin to which they were attached. No change of color was noted in the skin, nor any orange skin phenomenon over any of the nodes. In front of the right ear, at the border of the hair, was a crescentic group of brownish red smooth papules of split pea size.

One of the deep nodes on the back of the arm was removed and sectioned. The epidermis was practically normal. In the papillary layer a few groups of infiltrating cells were seen about the hair follicles, sweat ducts and blood vessels. Round cells predominated in these groups, with a few epithelioid and spindle cells, and the groups were not sharply defined. The capillaries were moderately dilated. Below this, occupying the whole reticular and subcutaneous layers, was a dense infiltrate forming round or cylindric masses separated by bands of connective tissue. Many of the cylindric masses paralleled the surface of the skin. Some of these groups, especially the smaller ones, showed a central or eccentric blood vessel. In the deeper portion the typical picture of growth atrophy was presented, small foci of infiltrate taking the place of the fat cells, with here and there an empty chamber which had not yet been invaded.

This infiltrate consisted of small, deeply staining round cells with a small amount of protoplasm, large spindle shaped or oval cells with pale vesicular nuclei and an often indistinct protoplasm, and giant cells with their nuclei arranged for the most part at the periphery. The protoplasm of the giant cells, like that of the epithelioid cells, often stained poorly and gave a glazed appearance. Typical oval or round epithelioid cells were seen, but were outnumbered by long cells with spindle or sausage shaped nuclei, staining faintly. Among these cells mitotic figures were often seen. The small foci in the former fatty layer sometimes consisted of a single large giant cell occupying the whole space of the original fat cell, or, more often, of a giant cell surrounded by epithelioid cells. Many of the giant cells looked as though they had been formed by the melting together of the protoplasm of a number of the epithelioid or long pale cells.

The connective tissue surrounding this infiltrate and forming septums between its lobules was dense, stained normally, and its elastic fibers were well preserved. Within the infiltrate no elastic tissue was found except a few short fragments. In the main body of the infiltrate, round cells were relatively few, plasma cells very few, and no mast cells present. Below the main mass of infiltrate was a looser network of pale staining connective tissue containing small groups of round and plasma cells, with fewer epithelioid cells and spindle cells than in the main mass.

The veins of both plexuses were dilated, the lower more than the upper. Some of the veins contained recent or organized thrombi. Both veins and arteries had thickened walls, infiltrated in places with epithelioid and connective tissue cells. Many of the vessels were partly or wholly surrounded by cuffs of infiltrate, which differed from that of the main tumor in containing more round cells, fewer epithelioid cells and no giant cells. A search for tubercle bacilli in sections stained with carbolfuchsin, and for *Spirochaeta pallida* in a portion of the tissue stained by the Levaditi method was fruitless in both cases.

In view of the positive Wassermann reaction, the evident periostitis, and the suggestive circinate arrangement of the papules on the arm and temple, inunctions of mercury and small doses of potassium iodid three times a day were given, with the astonishing result of clearing nearly all the lesions within a week. Only traces of the nodules remained. The periostitis and the large mass on the leg were much slower to yield, requiring several months for a complete cure. The patient did not receive any arsphenamin. At one time he neglected the treatment for a long time and suffered a recurrence, several small, hard nodules appearing in the skin of the right ankle. These cleared up promptly on resumption of the treatment.

Fig. 3.—Detail of infiltrate, showing two lobular groups of degenerated cells and several giant cells.

Histologically, these nodes suggested sarcoid more than gumma, in the preponderance of epithelioid and giant cells, the scarcity of plasma cells, the slight signs of degeneration, the absence of endarteritis, and the sharp definition and lobulation of many of the masses of infiltrate. Clinically,

also, the nodules were of cartilaginous hardness with only slight involvement of the skin after four months' presence, which is not the ordinary evolution of a gumma. In their number, size, grouping and association with papules in circinate formation, as well as their slow evolution, they may better be called deep nodules than gummas. The histology too, fits the nodular syphilid better than the gumma.

COMMENT

These three cases, Pautrier's second (the subcutaneous sarcoid), Laplane's and mine, were all unilateral and located on the extremities. There are many other cases in the literature that might well be ranged along with these if the data were sufficient. The evidence of a syphilitic etiology for these deep sarcoids is very strong. Ravaut, before Pautrier's report, had emphasized the complete analogy of the histology of skin lesions of tuberculosis and syphilis, and stated that sarcoid seemed to be associated as often with syphilis as with tuberculosis. The similarity of the histologic picture of tertiary syphilis with that of tuberculosis has been pointed out by Nicolas and Favre,[7] Ehrmann and Fick,[8] Fordyce[9] and others. More recently, the histologic similarity of paraffinomas, petrolatum and camphorated oil tumors has been shown by Heidingsfeld[10] and by Mook and Wander.[11] Clinically, the deep, indolent syphilitic gumma or nodule has long been known as a rare form of tertiary syphilid, but has not obtained the recognition that it deserves.

The restriction of the term sarcoid to Groups 1 and 2 of Darier's classification, as suggested by Pusey[12] and others, would rule out these manifestations of syphilis, for in my opinion they fall into Group 3—the erythema-induratum-like group—because of the large, cakelike infiltrations and their occurrence on the extremities rather than on the trunk. This distinction applies only to the cases so far reported, and the versatility which distinguishes syphilis makes it very probable that it is an unsafe one.

Sarcoids of the Boeck type in syphilitic patients offer a different problem. The fact that they clear up promptly on arsphenamin has no weight as an argument for their syphilitic nature, for the prompt disappearance of some tuberculids on such treatment is a familiar phenomenon. We are offered the choice between accepting a new tertiary syphilid and considering these cases sarcoids in syphilitic patients. With the information available at the present time, the latter seems decidedly the easier alternative. Instead of treatment of these cases with arsphenamin, a search for spirochetes in the tissue and a trial of mercury, or mercury and iodids, would shed more light on the problem.

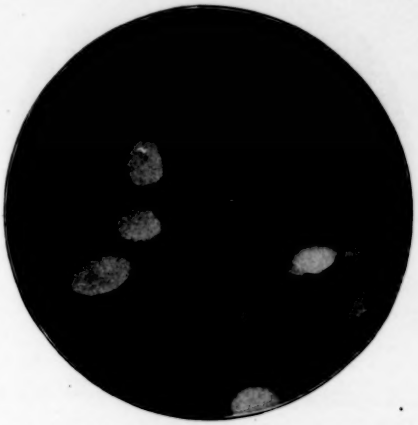

Fig. 5.—Detail showing epithelioid and large sausage shaped nuclei.

Fig. 4.—Widely dilated veins outside main infiltrate, with infiltrate about them, and loose connective tissue poor in cells outside this; organized thrombus in one vein.

CONCLUSIONS

Sarcoid of Boeck is a definite clinical type. There is no evidence that it can be caused by syphilis.

Sarcoid of Darier-Roussy, if limited to those cases with roughly symmetrical lesions on the trunk, has not been shown to have been caused by syphilis.

Sarcoid of the erythema-induratum-like type is sometimes caused by syphilis.

7. Nicolas, J., and Favre, M.: Contribution à l'histologie pathologique des siphilides tertiares cutanées, Ann. d. mal. véner., 1907, p. 401.
8. Ehrmann, S., and Fick, J.: Kompendium der speciellen Histopathologie der Haut, Wien, 1906, p. 68.
9. Fordyce, J. A.: Features of Cutaneous Syphilis, J. A. M. A. **49**: 462 (Aug. 10) 1907.
10. Heidingsfeld, M. L.: Histopathology of Parffin Prosthesis, J. Cutan. Dis. **24**: 513, 1906.
11. Mook, W. H., and Wander, W. G.: Camphorated Oil Tumors, J. A. M. A. **73**: 1340 (Nov. 1) 1919.
12. Pusey, W. A.: The Principles and Practice of Dermatology, Ed. 3, 1917, p. 1104.

Uses of the Giant Electromagnet.—Buchholz has found the value of the giant electromagnet to lie not only in the fact that by its aid steel and iron foreign bodies can be removed, but that they can thereby be more accurately localized. If the magnet is brought near to the part of the body in which the needle or other foreign body lies (that is, provided, it lies near the surface), the skin just over the foreign body will protrude. In the greater or lesser bulging of the skin and in the greater or lesser strength of the current passing through the magnet we have a measure for the deeper or the more superficial position of the foreign body.—*Zentralbl. f. Chir.* **48**:1079 (July 30) 1921.

THE DEFENSIVE REACTIONS OF ANIMALS INFECTED WITH SPIROCHAETA PALLIDA*

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Syphilis in the human subject is a disease which presents the most varied clinical manifestations but through all of its diverse forms preserves a sufficient degree of continuity to enable one to recognize certain conditions as fundamental characteristics of the disease. Much the same conditions prevail in the experimental animal, but with the advantage that one may exercise a considerable measure of control over all of those elements which contribute to the production of the disease. Thus, by inoculation of rabbits with *Spirochaeta pallida* one may obtain an infection which progresses no further than the production of a lesion at the site of inoculation with a local and general lymphadenitis, or, following the initial lesion, a variety of conditions may occur, including affections of the skin and the mucous membranes, the bones and the eyes with or without constitutional disturbance; and in still other instances, infection may take place without the production of a lesion at the portal of entry and there may be little or no clinical evidence of any kind to indicate that an infection exists.

Such occurrences are not to be regarded as matters of chance but as orderly expressions of an interaction between two sets of forces and, since it is possible to vary these forces, one may analyze the results of their action with the hope of being able to determine something of the general principles or laws which govern the reactions, as well as conditions which tend to influence the results in one direction or another.

This we have attempted to do; and while it is not possible to enter into the details of the experiments which have been carried out, some of the conclusions thus far reached may be presented in the form of brief statements covering certain fundamental conceptions as to the nature and mechanism of syphilitic reactions as they are observed in the experimental animal. In carrying out these experiments and in formulating our conclusions, we have made use of the lesions or clinical manifestations of disease as a standard of measurement. In the rabbit, all processes of reaction tend to be accentuated and are more clearly defined than in the human subject; hence relationships are more readily detected, and the occurrence or nonoccurrence of lesions, as well as the character of the lesions present in any given instance, may be assigned a definite value in the measurement of processes of reaction.

NATURE OF DEFENSIVE REACTION

From a consideration of the phenomena which characterize both human and animal infection, there are three conditions which possess a peculiar significance on account of the insight which they give into the nature and mechanism of defensive reactions; these are latency, relapse, and progression or the sequence observed in the evolution of the disease.

The phenomenon of latency in syphilis is one of the most striking examples in all medicine of the distinction between infection and disease; but the significance of this phenomenon has not been fully appreciated. A rabbit once infected with *Spirochaeta pallida* harbors virulent organisms for the remainder of its life, and yet active manifestations of disease may be difficult to detect at any time and are rarely observed after the first few months of the infection.

The fact that infection may exist over long periods of time with no appreciable manifestation of disease indicates that there are two elements in the defensive reaction of the infected animal which bear no fixed relation to each other. One of these is directed against the spirochete itself but is apparently of less consequence from the standpoint of the evolution of disease than the other, whose object is the neutralization of toxic or harmful effects.

These two reactions proceed in parallel directions but are not developed to an equal extent. In the animal, the prime object of the defensive reaction is the prevention or repair of harmful effects; and, as a rule, this is accomplished within a comparatively short period of time. In like manner, growth and multiplication of spirochetes are inhibited to an unknown extent so that the infection itself is brought under control. It is significant, however, that while the defensive reaction is carried to the point of complete neutralization of the power of the organism for the production of disease, infection is never abolished.

The distinction drawn between these two elements of the defensive reaction is of fundamental importance, and the failure to draw a clear line of demarcation between the two processes has caused some confusion—notably, in our conceptions of syphilitic immunity.

A second feature of syphilitic reactions which is deserving of especial consideration is the relapsing course of the disease. In the experimental animal, periodicity is observed in the development and resolution of individual lesions of all classes as well as in the evolution of the disease as a whole; relapse of healed lesions and relapse associated with the development of new lesions are also observed, but not as often as in man.

If one may regard a lesion as primarily an expression of toxic injury on the one hand and of a defensive or protective reaction on the other, an analysis of the phenomena of periodic development and resolution of individual lesions leads to the conclusion that there is a quantitative relationship between the injury produced by the spirochete and the reaction of the host; that when the injury has been checked, the reaction tends to decline; but, as not all spirochetes are destroyed in this process, the cycle is repeated, the state of resistance mounting with successive repetitions until the surviving organisms are incapable of producing further injury.

This process is multiplied many times over in the progress of the disease, with long or short intervals of quiescence or freedom from active lesions. Relapse is prone to occur, however, and it can be shown experimentally that the resistance acquired is definitely related to the extent or severity of the injury which the organism causing the infection is capable of pro-

* From the Laboratories of the Rockefeller Institute for Medical Research.
* Read before the Section on Dermatology and Syphilology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

ducing. Moreover, the margin of resistance above that required for protection against this organism may be very slight and wholly insufficient to protect against one of greater virulence. In fact, for reasons which are not as yet clear, an animal infected with an organism of low virulence may be less capable of defending himself against one of high virulence than a normal animal.

A study of the phenomena of relapse, therefore, brings out the fact that the defensive or protective reactions of the animal are directly related to injury—that the resistance acquired may be transient or relatively enduring, but tends to increase as the infection progresses until it is sufficient to afford a safe margin of protection against the organism causing the infection.

LAWS GOVERNING SYPHILITIC REACTIONS

With this general statement as to the nature and mode of development of defensive reactions, we may refer briefly to certain principles or laws governing their action which are especially applicable to the evolution or progression of the disease. Among the conditions affecting the evolution of disease in the experimental animal, there are two which appear to operate with the force of definite laws. These may be designated as "the law of inverse proportions" and "the law of progression or sequence." The circumstances which gave rise to the formulation of these laws have been presented elsewhere,[1] and only a few words of explanation are necessary to indicate their bearing.

The idea of proportion and the idea of an orderly progression in the evolution of disease are parts of a general conception of the mechanism of syphilitic reactions. It was first found that, under normal circumstances, the duration of any active manifestation of disease (lesion) was inversely proportional to the intensity and extent of the local reaction. Later, it was found that this principle was equally applicable to the disease as a whole, and that in general, the probability of the occurrence of manifestations of disease at any stage in the course of the infection as well as the severity and duration of the lesions diminished with the intensity and extent of the reaction developed during preceding stages.

By applying this principle to the experimental infection in the rabbit, one may modify the course and general character of the disease almost at will, subject to the second general principle of reaction which we have designated as "the law of progression." This is based on the fact that when allowed to pursue an undisturbed course, syphilis tends to preserve an orderly progression with varying degrees of intensity and extent. This characteristic of the disease appears to be attributable to the fact that different groups of tissues are not equally adapted to the growth and multiplication of spirochetes, on the one hand, and that they are not equally sensitive or reactive to the toxic effects of the organisms, on the other. Moreover, there is a natural order of susceptibility and of involvement, and the protective influences arising from reactions taking place in one group of tissues is extended to others in an equally orderly fashion. Under normal circumstances, therefore, the sequence observed in the occurrence of manifestations of disease may be regarded as an orderly progression whose direction is determined by the relative susceptibility of different tissue groups and whose limits are fixed by the sequence and extent of the defensive reactions.

According to the conceptions which have been presented, the animal organism must be regarded as possessing definitely organized lines of defense which operate in accordance with certain general principles or laws. If one inoculates a series of animals, therefore, under a given set of conditions, a definite type of disease should follow except so far as differences may be introduced by variations in the defensive mechanism of individual animals. On the other hand, it is equally apparent that, as the mode and force of the attack are varied, corresponding shifts in the defensive reaction must take place; that is, if the conditions of infection are varied, corresponding alterations may be expected to occur in the resulting disease. Hence, it may be said that the manifestations of disease presented in any given instance depend not only on the general laws which govern syphilitic reactions but also on a number of other circumstances, which include any and all conditions affecting the initiation of the infection, the resistance of the host or the pathogenic properties of the organisms themselves.

These factors are concerned primarily with the subject of variation rather than with the principles of syphilitic reactions, and will be reserved for future consideration.

1. Brown, W. H., and Pearce, Louise: Resistance (or Immunity) Developed by Reaction to Syphilitic Infection, and Some Effects of Suppression of this Reaction, Arch. Dermat. & Syph. 2: 675 (Dec.) 1920; Experimental Production of Clinical Types of Syphilis in the Rabbit, ibid. 3: 254 (March) 1921.

TWO HUNDRED AND FIFTEEN CASES OF SYPHILIS AFTER FIVE YEARS*

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The literature on various phases of syphilis has been very large during the last few years. Much has been written on experimental syphilis, the serology of syphilis, various methods of treatment and some on the pathology. The studies on treatment have for the most part been limited to ascertaining how quickly a given drug or combination of drugs given in various ways would clear up objective symptoms or bring about a negative Wassermann reaction. There has been practically no attempt made, at least so far as the literature shows, to follow any series of cases over a period of time sufficiently long to have real significance as to just what the various methods of treatment have accomplished. Such a study presents many difficulties: where there are large clinics a fair percentage of patients are among that class that do not remain in one place very long, and hence opportunity is given neither to treat nor to study for an extended period. Another group comes in reasonably early, with active symptoms which are rapidly cleared up; and these patients

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* Because of lack of space, this article is abbreviated in THE JOURNAL by the omission of case reports. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelop.

are prone to lapse shortly after their lesions are gone, because their knowledge of the disease is limited to their own experience, and their natural conclusion is that the disease disappears with the lesions. Another group is made up of those with chronic ailments who go to a new place or undertake a new treatment with enthusiasm, but are likely to transfer their affections to another clinic or physician when there is apparent failure to bring about "wonder cures."

During the past few years the war has also done its part in interrupting the routine in clinics, not only by claiming many patients for service but also by removing clinicians; the personal contact so necessary to the successful management of this type of patient was lost, and patients lapsed.

Notwithstanding the difficulties, it has seemed to me that there might be much to gain by attempting to make a study of old cases. One needs to study old records to improve on present ones, and particularly is it valuable to point out to clinicians how useless their records are for a study of this kind, if improperly or poorly kept. From time to time cases have been cited indicating that a patient may be serologically well for an even longer time than we have thought observation needed to cover, and later relapsed. This again indicates the need for extended observation, or for a review of old cases.

In 1915 and 1916, I made a survey of a part of the material going through the university clinic for the primary purpose of ascertaining what proportion of patients were remaining under treatment. The first survey covered a period previous to any social service, and the second a period when a social worker was included in the personnel of the clinic. In contemplating the present study, it seemed apropos to use this series of cases, and 215 clinic records were studied. At first consideration, one inclined to the idea that a large percentage of the cases could be gotten track of; then as the actual work started and the many difficulties became apparent, one despaired of getting a sufficient number to make it worth while. Forty-three of these patients have actually been located and either reexamined or at least sufficient information obtained to judge of their present status. Eleven private patients are added to this group. Although this is only a small number, it seems to me that I have gathered enough information about our records and methods, about the group as a whole and from certain individual cases, to make the effort worth while.

Of the 172 lost patients, 114 were male and fifty-eight were female. One hundred and five of these patients presented active objective symptoms at the time they were admitted to the clinic, and of these, seventy-two had a positive Wassermann reaction the last time it was taken. Unfortunately, and this is one of the lessons of the study, the records do not show by any notation in many cases just whether these lesions were cleared up or not, but it can be assumed that relapses would be probable with the Wassermann reaction positive. Thirty-three patients had negative tests, but a small percentage of these did not show positive tests on their admission.

Sixty-seven of this "lost" group had no active lesions so far as skin or mucous membranes are concerned. Of these, twenty-six showed their last Wassermann reaction positive and forty-one negative. In both the groups having active lesions and those having none, absolute conclusions from the blood tests cannot be drawn relative to any change, since in many cases the last test was made a number of weeks before the last visit, and might have been different if actually taken at the conclusion of whatever treatment the patient had.

Of the entire group of 172, the large majority, 139, attended less than six months. Twenty-nine made only one visit, and eighty-eight made less than five visits, so that more than one half did not attend long enough even to get one average course of arsphenamin. Sixteen patients attended for more than six months but less than a year; eleven attended just over a year; two attended two years, and four attended three years. We still hope to get in touch with some of these last thirty-three who attended for longer periods. The entire group made a total of 1,874 visits, an average of about eleven per patient.

Assuming that our clinic at that period was as good as the average—and from a survey that I made at about that time of a number of the clinics of the country in Class A schools, I know it was—a number of important points should be emphasized. Most important of all, as I see it, is the need of keeping patients coming to the clinic. Even mediocre treatment, if given over a period of several years, will do a lot for the average case, whereas even the best treatment if applied for less than six months can accomplish little for the average case. Keeping the patient coming means a careful first examination, with plenty of time not only to get a medical history but also to get acquainted with that patient and obtain an idea of his or her problems, and finally to give a brief but sufficient talk to the patient on what syphilis means and some information relative to the necessary treatment. There is no use expecting to keep a syphilitic patient coming for a long period if only a superficial examination is made, and he is quickly dismissed with the bare statement that he has syphilis and needs to come a long time. Physicians must realize the importance of these things if they are going to cure syphilis—specific medical treatment is only a small part of the job. Of course, with the addition of modern social service, great assistance has been added.

The need of making a diagnosis of active cases at the first visit and starting treatment preferably on arsphenamin is also to be emphasized, as there were quite a number of patients with active lesions who made only one visit, were examined, sent for a Wassermann test, and who did not return for treatment. Many of the patients came a few times but were given mercury because they could not afford arsphenamin, and at that time we had no free arsphenamin. If they could have been given the arsenic at once it would, of course, have been much better from a public health standpoint. Chart after chart shows that only superficial examinations were made, because there is practically no history and no record of any examination made at the beginning, nor any notations made as to the progress. Patients came in with active lesions, and during several months' treatment no notation is made as to when these lesions cleared up, if they did clear up. How are we ever to learn of the value of treatment if clinicians keep such records? Yet I know these are typical of many outpatient departments, not only then but even yet. Unless we bring our syphilitic patients somewhere near to what may be regarded as cure, we haven't done much for them, and I cannot

but feel that in the large majority of this group of 172 patients, our work was a flat failure. We need to point this out to ourselves if we are going to improve it.

By way of contrast, let us consider the figures from a more recently organized clinic that has had many of the advantages that the other lacked:

The night clinic at the university was organized in 1918 under my direction as head of the division of venereal diseases of the state board of health, and has been under the charge of Dr. H. E. Michelson from the beginning. This clinic is limited to men, has had reasonable social service, patients have been carefully studied, literature distributed, arsphenamin furnished free, and finally, where necessary, delinquency has been checked and opposed with the police power of the board of health. There have been 526 admitted directly and 249 transferred, a total of 775, of which 107 were found negative on examination. Of the remaining 668, 193 are lost and 475 are under treatment or discharged. There is therefore every indication that here the majority of patients are going to be treated long enough, and we hope well enough to accomplish real results.

ANALYSIS OF CASES

In this series of fifty-four cases, one started treatment in 1910; three in 1911; one in 1912; five in 1913; three in 1914; twenty-one in 1915; nineteen in 1916, and one in 1917, so that all except one have been under observation for a minimum of five years.

The treatment in general has been of the chronic intermittent type, courses of mercury and arsphenamin alternately. Mercury was given as mercuric salicylate twice weekly for six weeks, or as rubs five times weekly for six weeks. Occasionally mercuric chlorid has been used as noted, and occasionally the patient has had mercury internally for brief periods. Potassium iodid was frequently given in rest periods. Arsphenamin was generally given at weekly intervals in courses of four to six. Neo-arsphenamin was used almost exclusively except where arsphenamin is noted. The average dose has been 0.6 gm. In some of the earlier cases, larger doses were given when original German neosalvarsan was available. Many times, courses of the arsphenamin were interrupted on account of lack of supply during the war.

Where noted, it has not been possible to make examinations, although reliable information was secured. It has also been impossible to secure spinal punctures of many patients, and I realize this deficiency; but further studies of these cases will be made. When examinations were negative, skin and mucous membranes were examined, nerve reflexes, and Wassermann tests were made with acetone insoluble and cholesterinized antigens.

These patients received treatment as outlined in the accompanying table.

Patients have been roughly divided into four groups:

First Group (nine): Cases 2, 5, 15, 27, 30, 34, 35, 50 and 53. These patients were admitted early in their disease, and for the most part received a much smaller amount of treatment than would ordinarily be advocated. It is of particular interest that practically every one of these patients is still well after a period of several years. This would suggest that in a majority of cases seen within the first few months of infection, from six months to a year of intensive treatment will suffice. On the other hand, attention is directed to Case 23, in which the patient relapsed after one year of fairly good treatment, although treatment was instituted within six weeks of infection.

Second Group (twenty-nine): Cases 1, 3, 4, 6, 7, 8, 9, 14, 18, 22, 23, 24, 25, 26, 29, 31, 32, 36, 38, 39, 40, 42, 45, 46, 47, 48, 51, 52 and 54. These cases were well established although comparatively recent, and have received two to four or five years' treatment, have become negative and have remained negative for from one to five or six years.

TREATMENT

MERCURIC SALICYLATE INJECTIONS

Number of Patients	Injections
6	under 12
6	12
8	13 to 24
5	25 to 36
6	37 to 48
3	49 to 60
6	over 60
Total, 40	Total, 1,375

MERCURY RUBS

1	under 30
3	30
5	31 to 60
1	90
4	90 to 120
4	121 to 150
5	181 to 210
Total, 23	Total, 2,543

ARSPHENAMIN

9	5 or under
13	6 to 10
13	11 to 20
7	21 to 30
4	31 to 40
1	over 50
Total, 47	Total, 718

Third Group (eleven): Cases 11, 12, 16, 17, 19, 20, 21, 33, 43, 44 and 49. These cases were old ones with chronic ailments or mental and nervous involvement which were for the most part treated four or five years, have had large amounts of treatment and which still present some symptoms of one kind or another. Several of these patients present only a persistently positive Wassermann reaction and are clinically well. Further study is needed to settle definitely their status.

Fourth Group (five): Cases 10, 13, 28, 37 and 41. In one case (13), the patient died before any extended observation after treatment. The others are questionable for one reason or another, doubtful diagnosis or doubtful outcome, or are still under treatment.

CONCLUSIONS

Further studies of this kind on larger groups, if possible, should be made. Looking toward such studies, every effort should be made to keep accurate and detailed case histories. Patients receiving treatment for more than an ordinary length of time should pass through the hands of competent consultants to check carefully visceral syphilis and nerve involvement.

The value of social service and personal contact in keeping patients under observation should be emphasized.

Good medical service cannot be rendered if the patients do not attend the clinic.

Finally, I believe that this study, although limited, indicates that present accepted methods of treatment are adequate and, with the increased number of clinics with their better facilities, the increased educational activities and the new public health program, the outlook in this field is decidedly hopeful.

V. 7 1921

THE VISCERAL CHANGES IN CONGENITAL SYPHILIS*

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We know very little concerning the initial stage of congenital syphilitic infection, for we have not had an opportunity to observe the course of its development; but if primary lesions do occur, it is reasonable to assume that the site of such lesions will be as in the case of acquired disease at the point of entrance of the invading organisms. I shall begin, therefore, the consideration of the visceral changes to which the scope of this paper is limited, by describing first the anatomic alterations found in the placenta, the organ which may properly be regarded as the most important to fetal economy, performing, as it does, the functions of stomach, lungs and kidneys for the growing fetus. Formerly an attempt was made to divide these morbid changes into two groups. In one, the alterations were found in the maternal portion of the organ, and were supposed to correspond to those cases which had their origin in maternal infection. In the other were placed the changes found in the villi and their vessels; and when these changes alone were found, it was supposed that the disease had originated in paternal infection. It is now generally admitted that such a grouping is not warranted by the facts.

A syphilitic placenta is larger and heavier than normal, the weight often being to that of the body of the fetus as 1 to 4, whereas in the absence of syphilis the relation is 1 to 6. The consistency of the organ is softer than normal and at times is even friable. The color is usually a pale red mingled with yellowish white patches.

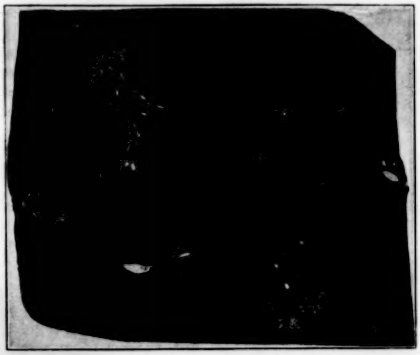

Fig. 1.—Section of liver, very low magnification, showing whole section without histologic detail. The dark spots are miliary gummas.

Sections studied under the microscope reveal changes which affect chiefly the vessels and stroma of the chorionic villi. The latter, when teased out in salt solution, lose their characteristic arborescent appearance and become club shaped. This appearance was first described by Frankel, and the condition is known as Frankel's disease. Histologically there is an endarteritis of the vessels often resulting in their obliteration and proliferative changes in the stroma, the normal stroma cells being replaced by closely packed round cells, plasma cells and fibroblasts. Williams[1] considers this microscopic picture to be characteristic of syphilitic infection. In an examination of 547 placentas he found that the microscopic examination tallied with the clinical and necropsy findings in the child in from 80 to 90 per cent. of cases, which was in marked contrast with the maternal Wassermann reaction, which tallied with these findings in only about 40 per cent. These figures would seem to justify Williams' conclusion that "the demonstration of the so-called Frankel's disease of the placenta offers twice as great a probability of gaining correct information concerning the condition of the child as a positive Wassermann in the mother, and that in the absence of a carefully conducted autopsy, it constitutes the most reliable means of diagnosis at our disposal."

Nevertheless, it must be remembered that these changes in the placenta cannot always be demonstrated and possibly when they are present, are not always pathognomonic. Of thirty-three cases of Williams' series, for example, in which the placentas were normal, twenty-two showed visceral syphilis at necropsy, while eleven showed conclusive clinical signs of the disease, and in thirteen cases the placentas showed definite syphilitic lesions while the necropsy findings in the fetus were negative. In a few cases in which frank syphilitic lesions were present in the liver, pancreas and lungs, I found it impossible to determine on histologic evidence alone whether the morbid changes in the placenta could be attributed to specific infection. If, then, we give the name of "syphilis of the placenta" to these changes, it should be with the reservation that, while they are highly suggestive of syphilitic infection, they may not be absolutely pathognomonic thereof.

THE LIVER

Of the postnatal organs, I shall first take up the liver, in which there occurs a variety of lesions. The organ is nearly always larger, firmer and heavier than normal, but very frequently the only histologic changes found are edema and evidence of retarded development, the latter being represented by large numbers of hematopoietic islands consisting of myeloblasts, lymphocytes and nucleated red cells, together with embryonic forms of liver columns. The edema is frequently of a myxomatous type, causing wide separation of the liver columns and suggesting an early stage of pericellular cirrhosis. In many parts of such livers the only conclusive evidence of syphilis may be the presence of large numbers of spirochetes in the edematous stroma; but, as a rule, careful search will reveal some foci of characteristic lymphocytic and plasma cell infiltration in the portal spaces. The lesion, however, which, though not of so common occurrence, is more generally known as the characteristic type of congenital syphilitic liver, is the so-called "pericellular" cirrhosis either with or without miliary gummas. In this type the liver is large, smooth with rounded edges, and very firm, giving the sensation on section of cutting rubber. The color may vary from a normal dark

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1. Williams, J. W.: Bull. Johns Hopkins Hosp. **31**: 335 (Oct.) 1920.

red to a brownish red or a pale, grayish brown, and sometimes the organ is completely green from saturation with bile pigment. The color has been compared by the French writers to that of flint (the *foi silex*).

Fig. 2.—A higher magnification of Figure 1, showing diffuse pericellular cirrhosis and two miliary gummas.

This flint appearance may be generalized, or it may be associated with a brownish red (*foi silex partiel*). Frequently the surface of the flint liver is diffusely covered by opaque, yellowish white spots which have been named by the French "semolina grains" because they resemble grains of flour (*les grains de semoule*). On sectioning the organ these are usually distributed throughout the liver substance, and microscopic examination shows that these dots or grains which appear scarcely more than pin points in size to the naked eye are made up of collections of round cells with central necrosis. In other words, they are miliary gummas differing in structure from the large gumma nodules found in the acquired disease only in that in the latter the necrosis is large enough to be seen by the naked eye, while in the former it can be seen only with the aid of the microscope.

Attention should be called to the fact that the gross appearance of the flint liver with the semolina grains may simulate tuberculosis. In the course of routine postmortem investigations at the New York Foundling Hospital, I recently encountered a case in which areas resembling the so-called semolina grains were rather evenly distributed throughout the liver tissue. The macroscopic appearance resembled that of syphilitic infection, but the histologic picture was that of miliary tubercle, and tubercle bacilli were demonstrated in the stained sections. If one remembers that the lesions in the case of syphilitic infection are smaller and of a more regular shape than the miliary and conglomerate tubercles, mistakes in diagnosis may frequently be avoided.

The section pictured here (Figs. 1 and 2) is of a liver removed at necropsy in the case of a child, aged 2 months. The gross appearance was that of the flint liver rendered green by saturation with bile pigment. On section the semolina grains stood out sharply from the liver tissue, giving the appearance of minute particles of gray sand. Microscopic examination of sections disclosed the presence of miliary gummas and an overgrowth of embryonic connective tissue separating the liver columns and individual cells (pericellular cirrhosis). The absence of epithelioid and giant cells in these lesions is strong evidence that these microscopic areas are syphilitic lesions and not tuberculous. In tubercle formation, epithelioid and giant cells make their appearance at the very beginning, and always precede the necrosis; while in the development of a miliary syphiloma, they follow or come after the necrosis. Thus, it may be possible in the case of early lesions to differentiate between a syphilitic and a tuberculous process on the histologic findings, a point which I regard as of considerable importance especially in those cases in which, from delay in gaining permission for postmortem examination or other causes, it is impossible to demonstrate the presence of the infective organisms.

Fig. 3.—Intracellular edema of heart as seen with high power.

The larger forms of gumma of the liver are not common in congenital syphilis, only a few cases being reported in the literature. In one case of the series studied, that of a boy, aged 7 years, the liver showed the characteristic deep scarring known as "hepar lobatum" so commonly seen in adult cases. However,

as one cannot be sure that this boy did not contract the disease during childhood, we are not justified in placing the case on record as congenital syphilis.

In the Bellevue Hospital series, diffuse amyloid infiltration was found in the liver in three cases, two of which were in children aged 1 and 2 years, respectively; the other in a boy aged 19.

THE HEART

It is now well known that the heart and large vessels are quite frequently the seat of changes which do not differ from those found in the acquired disease. Disease of the endocardium has been observed in a few of the cases examined postmortem at Bellevue Hospital, and Fordyce quotes Rach and Wiesner as having found changes in the aorta and pulmonary artery in 67.4 per cent. of their cases.

Changes in the myocardium, giving themselves expression in the usual perivascular round-cell infiltration and miliary gummas and rarely in the large necrotic lesions (naked eye gummas), have long been looked on as the one and only type of reaction to the presence of *Spirochaeta pallida;* but of late years, and more especially since the publication of Warthin,[2] a new type of reaction (nonvascular) has been recognized. Warthin believes that the heart is one of the most frequently affected organs in syphilis. He reports his findings in a study of fifty cases of congenital disease, and describes parenchymatous changes, such as pale degeneration, focal fatty degeneration, simple atrophy, necrosis and interstitial lesions consisting of a peculiar form of edema (myxedema), vascular and perivascular infiltration and localized myxoma-like formations.

Possibly on account of not having had the opportunity of studying a sufficient number of cases, I have to report that I have not observed the focal fatty degeneration and myxoma-like areas described by Warthin. The most frequent findings other than the usual perivascular exudative changes in the cases which came under my observation were an interstitial edema in practically all of the cases examined, and in a few of the cases a sample of which is pictured here (Fig. 3) an edema, or perhaps a better term would be a hydrops of the muscle fibers. In cross sections taken from below or above the plane of the nucleus, the fibers appear as empty tubes; and in sections made through the plane of the nucleus, the latter is seen lying in an empty space surrounded by a thin rim of myofibrillae.

In a comparative examination of the hearts of young fetuses, especially those of premature birth in which there was no evidence of syphilitic infection, interstitial edema was a rather constant finding, which fact gives rise to grave doubt as to its value as an indication of syphilis. The parenchymatous edema, however, is more significant, and even when postmortem changes render impossible the demonstration of spirochetes, it is extremely suggestive of syphilitic infection.

2. Warthin: Am. J. M. Sc. **147**:667, 1914.

LUNGS

Gummatous lesions of the lungs have been described,[3] but they must be very rare in the congenital type of the disease. I have not seen them in the material examined at the New York Foundling and Manhattan Maternity hospitals, nor found any reference to their occurrence in the records of Bellevue Hospital. The usual picture found in fetal syphilis corresponds fairly well to that described under the caption of pneumonia alba. In the cases which I studied, the predominating changes observed were interstitial fibrosis and associated desquamation of alveolar epithelium. In a remarkable case which I reported last year, I[4] described an appearnace in the visceral pleura which, as far as I am aware, was never before described in syphilis. The pleura was markedly thickened and the histologic picture was strikingly similar to that seen in typhoid fever, namely, the presence in distended

Fig. 4.—High power drawing from the interlobular pleura, showing a distended lymph vessel containing large mononuclear phagocytes with ingested lymphocytes.

lymph vessels of large phagocytic cells holding large numbers of lymphocytes in their cytoplasm (Fig. 4).

PANCREAS

As in the case of the lungs, frank gumma is a rare lesion in the pancreas. I have seen one case (owing to the kindness of Prof. James Ewing), and Hazen refers to cases reported by Krebs. The usual changes found in the organ, and they are common, are interstitial and resemble in many respects those described as found in the liver, namely, interlobular and intralobular round-cell infiltration and fibrosis, causing wide separation not only of lobules but also of the individual acini, changes which make the organ

3. Hazen, H. H.: Syphilis: A Treatise on Etiology, Pathology, Diagnosis, Prophylaxis and Treatment, St. Louis, C. V. Mosby Company, 1919.
4. Fraser, J. F.: Pathology of Congenital Syphilis, Arch. Dermat. & Syph. **1**:491 (May) 1920.

in the gross appear large and whitish, firm and nodular, and on section somewhat gritty.

It is of interest to note that although the lungs and pancreas are almost always involved in congenital syphilis, these organs are rarely attacked in the acquired form of the disease.

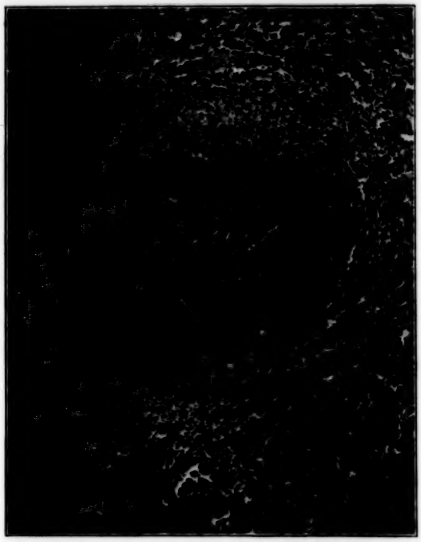

Fig. 5.—Amyloid infiltration of splenic nodule, high power.

SPLEEN

According to Veeder and Jeans, enlargement of the spleen in infants under 6 months is almost pathognomonic of either tuberculosis or syphilis. Hazen refers to three types of lesion: the simple hyperplasia, the diffuse fibroid changes and true gummas. Amyloid infiltration was observed in two cases in the Bellevue series, one showing diffuse infiltration of the pulp and the other the characteristic "sago grain" appearance (Fig. 5).

BRAIN, CORD AND MENINGES

Nonne [5] states that the occurrence of tabes and paresis is not rare in congenital syphilis, and he relates having found in his own experience tabetic children in ten different families. At the suggestion of Dr. Pollitzer, I examined all cords removed at necropsy in cases of fetal syphilis but with invariably negative findings. Cerebral syphilis is more common. In a case occurring in my own experience in which numerous spirochetes were demonstrated in the meninges, the brain, pia-arachnoid and dura were matted together in a diffuse gummatous mass. In localized areas the process involved the frontal bones (gummatous osteitis).

5. Nonne: Syphilis and the Nervous System, translated by Ball, 1913.

GASTRO-INTESTINAL TRACT

Although Wile [6] mentions that the early writers of the nineteenth century recognized congenital syphilis of the stomach as a pathologic and clinical entity, the experience of present day observers would seem to point to the conclusion that congenital lesions in the stomach are exceedingly rare. In the Bellevue records consisting of protocols of forty-seven postmortem examinations, I cannot find a report of a single case, and I have myself examined material from Dr. Ewing's collection, the New York Foundling Hospital and the Manhattan Maternity dispensary with uniformly negative results.

Lesions of the intestine, however, are not so infrequent, and syphilitic antenatal peritonitis was regarded by Sir J. W. Simpson [7] as long ago as 1838 as a cause of death in the case of children dying in the latter months of pregnancy. Hazen refers to two forms of lesion, one involving Peyer's patches or solitary follicles, and the other that in which the lesions are generally distributed throughout the whole of the small intestine. In a case of ulcerative enteritis and colitis observed at Bellevue Hospital, the ulcerated areas in the ileum were confined to a portion of the intestine 6 inches from the cecum. They were irregular in outline with thickened, elevated and hemorrhagic margins,

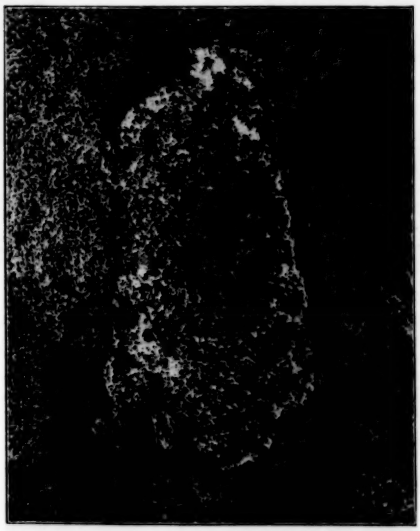

Fig. 6.—Thymus (low power), showing diffuse fibrosis with obliterating endarteritis and one abscess containing hyaline masses, multinucleated giant cells and numerous pus cells.

the bases being irregularly roughened and covered with necrotic material, and the long axes of the ulcers arranged transversely to the long axis of the intestine. The serosa over these areas was not thickened, and

6. Wile, U. J.: Syphilis of Liver, Arch. Dermat. & Syph. 1:413 (April) 1920.
7. Simpson, J. W., cited in Ballantyne's Text Book, 1902, p. 236.

the remaining portions of the small intestine were not involved. In the large intestine, at a point about 8 inches from the anus, there was an irregularly elevated and thickened area parallel with the long axes of the intestine. As spirochetes were demonstrated, there can be no doubt about the syphilitic nature of these lesions.

THYMUS

Pathologic alterations in the thymus have long been recognized in fetal syphilis, but the lesion which has attracted the greatest attention and caused so much disagreement in regard to its pathogenesis is the so-called Dubois abscess. Chiari, Schlesinger, Simmonds, Ribbert and Tuve all agree that these lesions are of the nature of cysts and lined by epithelium, but they do not agree as to the manner of their origin, Chiari and Schlesinger claiming that they arise from the Hessal bodies, while Simmonds and Ribbert believe that they are the result of defective development of the primary cavity of the developing thymus. Tuve holds the view that they arise by necrosis of the medullary tissue, and Pappenheimer describes two cases, in one of which cysts were present. In the other "the change consisted entirely in the presence of reticular epithelial cells and a few lymphocytes."[8]

In a case which I have studied histologically of a male child stillborn, the thymus was enlarged and the surface of the organ was deeply congested and irregularly hemorrhagic. On section the upper half presented a spherical cavity a little larger than a dime, distended with fluid blood. The lower half on section presented a cavity about the size of a quarter which was occupied by a grayish white, pasty, puslike material. Microscopic study of sections reveals no evidence of cyst formation. The picture is that of multiple granulomas for the most part in the cortex and rather definitely outlined by the boundaries of the lobules. In the apparently earlier stages they are composed of small round cells, many epithelioid cells and a few multinuclear giant cells which are evidently formed by fusion of phagocytes around masses of hyaline substance very like the central portions of Hassall's corpuscles. An occasional degenerating Hassall corpuscle may be present. The later stages show the same background infiltrated with polymorphonuclear leukocytes and the whole undergoing liquefaction necrosis. These areas generally retain the shape of the lobules, and have a well marked cellular periphery composed of large cells which might be mistaken for epithelial cells, but which, on close inspection, prove to be mononuclear phagocytes and large fibroblasts (Figs. 6 and 7).

KIDNEY AND SUPRARENALS

The pathologic changes most commonly found in my experience in the kidneys of congenital syphilis were represented by the presence of foci of lymphocytes in and underneath the capsule and in the interstitial tissue between the tubules. The picture was that of acute interstitial nephritis. Hazen gives an excellent summary of the various lesions that have been described in the kidneys and suprarenals, and those interested in following the subject are referred to his book[3] as a valuable reference to the latest and best work.

8. Oliver, Jean: Syphilitic Disease of the Thymus in Infants and the Mode of Origin of the Dubois Abscesses, Am. J. Dis. Child. **13**: 159 (Feb.) 1917.

The lesions described may all be found in congenital syphilis, but at times those which might well be regarded as pathognomonic of the disease may be absent. Osteochondritis of the long bones (not discussed here because it is a skeletal lesion), for example, was not present in a case in which spirochetes were demonstrated, and characteristic lesions were found in practically all of the visceral organs. In the majority of cases, however, there will be found some lesion, if not in one organ in another, which will be sufficiently

Fig. 7.—Early stage of a lesion in a thymus lobule (high power); numerous epithelioid and giant cells with small foci of pus cells.

characteristic to enable the pathologist to come to a definite conclusion even before he receives a report on the bacteriologic examination.

Tuberculosis in Poland.—The American Red Cross Commission to Poland reports that in spite of the enormous spread of tuberculosis during the war, the number of cases is now actually less than in 1914. Up to that time Warsaw could boast that its tuberculosis percentage was less than that of Paris, Vienna or Moscow. Then the situation in Poland rapidly grew worse. Mortality rose rapidly. In 1917, four out of every 100 of the inhabitants of Warsaw died, and one fourth of the deaths were ascribed to tuberculosis. Sixty per cent. of the child mortality in 1917 was ascribable to tuberculosis. Every third child examined in hospitals or in private practice was tuberculous. At the end of the war the curve of tuberculosis took an immediate and abrupt turn downward. Mortality decreased from the day of departure of the German army and the cancellation of the disastrous food requisitioning which had accompanied the German occupation. In 1920 the conditions were approximately the same as in 1914. Improved food and living conditions had begun to make themselves felt; likewise the antituberculosis measures taken by the Polish government and various relief organizations—the Hoover food relief and the American Red Cross.

CORRECTION OF CICATRICIAL ECTROPION BY USE OF TRUE SKIN OF UPPER LID *

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In 1597, Tagliacozzi,[1] who was interested in plastic surgery, laid down a rule which he considered fundamental. It was that a flap must keep its connection with adjacent living tissue by means of a pedicle, and that this pedicle must not be severed until union between the flap and the raw surface on which it is planted had taken place. Reverdin [2] disproved this theory by successfully transplanting small particles of skin to a raw surface, and in 1869, gave a report on skin grafting by his method of handling detached grafts. In 1870, Lawson [3] grafted for the treatment of ectropion, and it would seem that he should be given credit for priority. Ollier,[4] in 1872, found it possible successfully to graft pieces of true skin larger than those used by Reverdin.

The development of the use of detached grafts of true skin occurred within the ranks of ophthalmologists. DeWecker [5] wrote in 1872 on "La Greffe dermique en chirurgie oculaire." He advocated a mosaic of small dermic grafts from the inner surface of the forearm or arm to cover the raw surface on the eyelid after dissection.

In the year 1876, J. R. Wolfe,[6] surgeon to the Glasgow Ophthalmic Institution, under the title "A New Method of Performing Plastic Operations," reported two cases of lid repair by the use of free dermic grafts from the forearm for the correction of deformities of the eyelid. In doing so, he said, "the pedicle has, in my opinion, been a source of great embarrassment to surgeons, and the constant employment of it has tended rather to retard than advance

Fig. 1.—Operation for cicatricial ectropion of lower eyelid; primary incision parallel to lower lid margin.

the progress of plastic surgery." In one case, Wolfe took three grafts of true skin. On one of these, he left subcutaneous tissue, but from the other two he removed all adherent tissue, leaving only skin. The two pieces thus prepared took, while the graft with subcutaneous tissue sloughed in large part. Wolfe, very wisely, came to the conclusion, which has since been sustained, that "if we wished a skin flap to adhere to a raw surface by the first intention or by agglutination, we must be sure that it is completely cleared of all areolar tissue, and properly fixed in its new place." Wolfe's method

Fig. 2.—Dissection in lower lid completed; graft from upper lid outlined.

was promptly taken up, and operations for ectropion by the use of detached flaps of true skin were reported by Wadsworth,[7] Aub,[8] Howe,[9] Noyes,[10] Zehender,[11] Benson,[12] Tosswill [13] and others. Partial success rewarded many of the early efforts, but contraction of the graft was annoying, and there were many failures due to the fact that "agglutination" did not take place. Obviously, improvement in technic was called for.

In 1919, I [14] presented a paper entitled "Free Dermic Grafts for the Correction of Cicatricial Ectropion." In this paper a number of suggestions were made in regard to the technic of carrying out successfully the method propounded by Wolfe. All the details of the technic will not be reiterated at this time. In 1920, I [15] read a paper before this Section entitled "Restoration of the Margin and Neighboring Portion of the Eyelids by a Free Graft From the Lower Part of the Eyebrow and the Skin Directly Below It." Both before and since this paper was read, I have been operating in suitable cases of cicatricial ectropion by using a detached graft

* Read before the Section on Ophthalmology at the Seventy-Second Annual Session of The American Medical Association, Boston, June, 1921.

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3. Lawson: Lancet **2**: (Nov. 19) 1870.
4. Ollier: Bull. de l'Acad. de méd. **1**: 7, 1872.
5. DeWecker: La Greffe dermique en chirurgie oculaire, Ann. d'oculi., 1872.
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10. Noyes, in a discussion of Howe's paper, Tr. Am. Ophth. Soc. **3**: 52, 1880.
11. Zehender: Tr. Am. Ophth. Soc. **3**: 47, 1880.
12. Benson: On Restoration of the Eyelid by Transportation of Skin from Distant Parts of the Body, Med. Press, April 26, 1882, p. 353.
13. Tosswill: A Case of Ectropion Successfully Treated by Transplantation of Skin from the Arm, London, Churchill, 1882; Brit. M. J. **1**: 9 (Jan.) 1882.
14. Wheeler: Free Dermic Grafts for the Correction of Cicatricial Ectropion, Am. J. Ophth. **3**: (April) 1920.
15. Wheeler: Restoration of the Margin and Neighboring Portion of the Eyelid by a Free Graft from the Lower Part of the Eyebrow and the Skin Directly Below It, J. A. M. A. **75**: 1055 (Oct. 16) 1920.

V. 7
1921

of skin from the upper lid for ectropion of the lower lid, or for ectropion of the fellow upper lid. As far as I can learn by search of the literature, this idea was original with me, and after many trials by myself and by other eye surgeons with whom I have been associated I can confidently recommend this procedure as being by far the best yet devised for cicatricial ectropion in cases in which it can be applied, and there are surprisingly few to which the method is not applicable. For ease of taking and handling the dermis, and for beauty of result, no other graft can compare favorably with it. The accompanying illustrations show the scheme for handling ectropion of the lower lid and of the upper lid by this method.

TECHNIC OF OPERATION

Cicatricial Ectropion of the Lower Lid.—This is far more common than that of the upper lid. That full correction of this deformity has always been considered difficult there can be no doubt; but we should aim at absolute correction, even to the proper conduction of the lacrimal secretion, if the drainage system is still intact.

The primary incision (Fig. 1) should be parallel to the distorted lid margin. Cicatricial tissue should be so thoroughly and painstakingly removed that there will be no tendency of the lid to evert or lop, and that there will be scarcely more than normal resistance to upward traction at the lid margin (Fig. 2). In making the preparatory dissection, the tissues should not be handled roughly. Artery clamps should not be used unnecessarily, and no ties should be used on bleeding vessels.

Either two or three firm adhesions between the upper and lower lids are made by dissecting off epithelium at corresponding positions on the upper and lower lid

Fig. 3.—Preparation of lids for the intermarginal adhesions; rectangular denuded areas of upper and lower lid margins held in apposition by sutures tied over small rubber plates.

margins and carrying mattress sutures through the little raw surfaces. They are passed through small plates of rubber (cut from sterile rubber tubing) overlying the skin of both upper and lower lids near their margins (Fig. 3). These sutures are tied snugly to insure firm apposition of the opposing raw surfaces. Union of these raw surfaces causes the formation of adhesions for the support of the lower lid. Later, these adhesions stretch somewhat and are covered with a growth of epithelium. This stretching allows of very slight separation of the lids, so that the patient can see

Fig. 4.—Skin graft from upper lid sutured in place in lower lid, sutures ready to tie to close wound in upper lid.

between the margins, a thing to be encouraged as elevation of the upper lid stretches the lower. With this in view, it is well to avoid making an adhesion directly in front of the pupil.

Removal of the True Skin Graft From the Upper Lid.—This is very simple as compared with the dissection of a dermic flap from the arm, thigh or elsewhere. Almost no allowance need be made for contraction. In fact, a graft exactly the dimensions of the raw surface to be covered will answer. This graft can be taken from either upper lid, or, if need be (if each upper lid will afford skin) two grafts may be taken to cover the raw surface. I have never found it necessary to take more than one for a single exposure of raw surface. From the upper lid of a young adult, a piece of skin measuring from 20 to 25 mm. wide and 50 mm. long can be taken. From an elderly person, usually greater width can be obtained without danger of lagophthalmos. In removing the graft, I do not use a grasping forceps of any kind for fear of bruising the graft. Outlining incisions are made through the dermis of the upper lid. A fusiform or semilunar shaped graft will almost always be needed, and a graft of this design is convenient to take. A cataract knife is slid under the skin from the lower incision to the upper. The knife is carried by careful sliding motions nearly to one end of the graft. Then it is turned about and carried to the other end, freeing it. The piece of skin is picked up with the fingers and set free.

By placing the graft, epithelial surface downward, on a pad wet with warm (body temperature) normal salt solution, any fragments of subcutaneous tissue can be quickly snipped off with the scissors. This is not a tiresome process as it is in the case of an arm graft.

Fine silk sutures (No. 1, twisted) impregnated with paraffin are used to stitch the graft in position (Fig. 4). The ends should be secured first, and then the margins should have as many sutures as may be needed to hold them in place.

No undermining is necessary in order to bring the wound edges together in the upper eyelid. The raw

Fig. 5.—Operation for cicatricial ectropion of upper eyelid showing deformity of left upper lid, with dotted line to indicate position of primary incision.

surface is easily closed over by fine silk sutures, and there need be no fear of subsequent opening of this wound.

Cicatricial Ectropion of the Upper Eyelid.—If only one upper lid is deformed, a piece of skin from the fellow lid makes an ideal graft. Obviously, skin should never be taken from a lower lid for an upper one. The technic of the operation is the same for the upper lid as for the lower. Figures 5, 6 and 7 show the steps.

Dressing.—The graft should be covered with rubber tissue, having the slightest smear of sterile petrolatum.

Fig. 6.—Dissection in left upper lid completed, and lids sutured together at denuded areas of upper and lower lid margins; dermic graft being taken from right upper lid.

I prefer to put the tissue on in two layers with the grains running at right angles, to guard against the possibility of perforation through separation of the tissue fibers. The rubber tissue will prevent the skin graft from getting dry. "Greasy tulle," as recommended by Morax is not suitable for covering this delicate graft.[16] If a covering other than rubber tissue is chosen, it should be of smooth surface, pliable and without perforations. Over the tissue, gauze fluff is packed and secured firmly by adhesive plaster, and then by pressure bandage, which in turn should be secured by adhesive plaster. It is well to put a separate dressing over the other eye, to be left for two or three days, and then to be cut down without disturbing the main dressing and bandage. This should be left for six days at the end of which time it is removed with the utmost care, and the graft painstakingly cleansed with damp (not wet) boric acid sponges, and all sutures taken out. At the first dressing the grafted skin will appear pink, not anemic like a graft from the arm. The outlines of the beautiful inlay are hardly seen even at the first dressing. Rubber tissue, gauze dressing and bandage, changed every two days, are continued for another week; then dressing is no longer necessary, and the graft is kept smeared with a little sterile petrolatum.

About three weeks after operation, it is prudent to start massage with petrolatum. This is kept up daily for several weeks. The adhesions between the lids should remain for at least three months. They should be left until all tendency to malposition of the lid has

Fig. 7.—Graft from right upper lid sutured in position in left upper lid; wound in right lid closed with sutures.

passed. They are then cut with the scissors, and no deformity results from them.

If properly handled, this lid graft will "take." It will match in color, texture and pliability almost from the start, as no other graft will. It will not grow hairs, and will not be a disfigurement in any sense. Furthermore, one may remove this graft of skin from the upper lid with the assurance that no deformity will result. A few weeks after operation, there is nothing to arouse the suspicion that the upper lid has been robbed of skin.

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ABSTRACT OF DISCUSSION

DR. WALTER B. LANCASTER, Boston: A survey of the literature of plastic work on the eyelids shows that for a long time there has been a discussion between those who favor sliding flaps and those who favor free grafts. In this connection I might mention the report of Kuhnt, who did over 100 cases by the pedicled flap method and then compared his results with nearly an equal number of cases in which the free graft was employed. They were almost equally good; that is, it was a drawn contest. In certain cases the pedicled

16. Morax: Plastic Operations on the Orbital Region, Transactions of the Ophthalmological Society of the United Kingdom **39**: 5, 1919.

V. 7 1921

flaps were best, in others the free graft. The chief objections to the flaps are in the first place the very thick and disfiguring appearance that often follows. The graft becomes thicker and more disfiguring, requiring further operation. The skin of the lid is naturally thin, free from fat. In making a sliding graft you have to make it thick if you want to secure good nutrition. The result is a thicker lid than you need. In making a free graft, the skin, of course, does not match in color and quality if you take it from the arm or leg and use it for an eyelid. But by following Dr. Wheeler's plan of taking skin from the other lid you have ideal material; indeed, as he says, the skin is so well matched that even at the first dressing you can hardly see where the graft leaves off and the original skin begins. One of the most important factors in all this surgery is the cosmetic effect; therefore I feel very enthusiastic about the possibilities of the method which Dr. Wheeler has presented. If you want to get Dr. Wheeler's results, it is necessary that you closely follow his very careful technic. For instance, in dissecting the graft from the other lid he does not touch it with forceps, and he is careful to avoid all mechanical injuries and similarly all chemical or other injury of the tissue. All bleeding must be stopped, the bed of the graft must be carefully prepared, perfect apposition or contact secured, the lids immobilized, and the subsequent treatment must be very thoroughly followed up, including massage.

THE PHENOLTETRACHLORPHTHALEIN TEST FOR LIVER FUNCTION *

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Phenoltetrachlorphthalein, hereinafter designated as tetrachlor, was first prepared by Orndorff and Black [1] of Cornell University, in 1908. Its properties were described by Abel and Rowntree,[2] in 1909. "Like phenolphthalein, it is an odorless, tasteless crystalline compound, insoluble in water and forming deeply colored hydrolizable salts with alkalis. Its ionization constant has not been determined, but its avidity as an acid cannot be far removed from that of phenolphthalein." Its intravenous injection as a disodium salt, well diluted, produces no untoward disturbances. It does not affect the rate of flow of either the pancreatic juice or the bile. It is excreted principally through the bile into the duodenal contents by the activities of the hepatic epithelium, and is absorbed only by the large intestine.

In 1913, Rowntree, Hurwitz and Bloomfield [3] advocated its use to determine the functional activity of the liver in man. In dogs with biliary fistulas, they demonstrated that the dye appeared free in the biliary secretion in fifteen minutes; also in the collected feces of forty-eight hours, from 35 to 55 per cent. of it could be recovered. A similar corroboration of these facts has been made in man. Whipple [4] conclusively showed that by producing liver injury through phosphorus poisoning, prolonged chloroform administration, the induction of inflammatory processes or by alterations in circulatory balance, there was a decided fall in the tetrachlor output—that the percentage of output corresponded inversely to the amount of injury produced and, as repair took place, the tetrachlor output proportionately increased.

The test as carried out on man consisted in the intravenous injection of a freshly prepared physiologic sodium chlorid solution containing 400 mg. of the disodium salt of phenoltetrachlorphthalein. Following the intravenous injection, brisk purgation was established, and all the feces passed in forty-eight hours was collected and by chemical and colorimetric methods the amount of dye excreted was determined. This test was given a thorough trial by McLester and Frazier,[5] and Kahn and Johnston,[6] who reported unfavorably on it owing to the variation in figures they found between the normal and definitely pathologic hepatic cases. On the other hand, Sisson,[7] and Chesney, Marshall and Rowntree [8] conclude that outspoken changes in the liver can be demonstrated by the test. Krumbhaar [9] also believes that the test has considerable possibilities for determining the functional capacity of the liver.

The disadvantages of this method of applying the test are: (1) the necessity of a fresh preparation for each test, owing to the instability of the dye; (2) the difficulty of collecting all the feces passed in forty-eight hours; (3) the absorption of some of the dye by the large bowel, and (4) the elaborate technic associated with the injection of a large amount of fluid into the veins.

In 1916, McNeil [10] modified that procedure in an important and valuable manner. He inserted the duodenal tube, injected the tetrachlor intravenously, collected the contents, and estimated the time of the first appearance of the dye, and the percentage recovered over a period of two hours. He emphasized the ease and lack of objections to this method of conducting the test, and also the disadvantages of the intermittent outflow of the bile and the effect of fear, nervousness and hunger on biliary secretion.

It is our desire to introduce a stable preparation of the dye and a modified duodenal technic which, we believe, will enhance the test and render it more easily applied and valuable in determining liver function.

PREPARATION OF THE STABLE SOLUTION OF THE COMPOUND

Two and five tenths grams of the tetrachlor is placed in a 200 c.c. flask with 5 c.c. of a twice normal sodium hydroxid solution and 45 c.c. of triple distilled water. This is boiled for twenty minutes under a reflux condenser and then filtered into a 100 c.c. flask. The final result is an aqueous solution of the disodium salt of phenoltetrachlorphthalein, which is an intense purplish red and decidedly unstable in character. This is due to the fact that the alkali of the salt tends to unite with the silicate of the glass container, producing a precipi-

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

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2. Abel, J. J., and Rowntree, L. G.: On the Pharmacological Action of Some Phthaleins and Their Derivatives, with Especial Reference to Their Action as Purgatives, J. Pharmacol. & Exper. Therap. **1**: 231, 1909.
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6. Kahn and Johnston: The Phenoltetrachlorphthalein Test of Liver Function, New York M. J. **102**: 848, 1915.
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9. Krumbhaar, E. B.: The Present Status of Liver Functional Tests, New York M. J., 1914, p. 719.
10. McNeil, H. L.: The Quantitative Estimation of Phenoltetrachlorphthalein Excreted in the Fresh Bile in Disease of the Liver, J. Lab. & Clin. Med. **1**: 822 (Aug.) 1916.

tate. If the solution is exposed to the air, it unites with the carbon dioxid again, forming a precipitate.

In order to obviate this, ampules containing a low percentage of silicate are placed in cleaning fluid for one hour, after which they are rinsed in six changes of tap water. They are then placed on an ampule washer, and washed until entirely free from the cleaning solution. The ampules are then washed in three changes of distilled water and allowed to dry. They are then plugged with nonabsorbent cotton and placed in a hot air sterilizer at 220 C. for one and one-half hours. This entire procedure must be carried out under absolutely aseptic conditions.

One and five tenths cubic centimeters of this solution, representing 75 mg. of tetrachlor, are poured into these ampules and sealed. These ampules have undergone no changes whatsoever in a period of eight months.

PASSAGE OF THE TUBE

The tube is passed into the fasting stomach and all gastric residue is withdrawn. It is then allowed to pass on into the duodenum. This procedure takes from one-half hour to eight hours, using all methods of posture, the partial withdrawal of the tube and the administration of water by mouth.

In view of the possibility of confusing our reactions, certain methods of demonstrating the presence of the tube in the duodenum were omitted, such as the drinking of milk or colored solutions by mouth. Only the following were used:

1. The inability to secure an immediate return flow of water after its oral administration.

2. The failure to obtain an intermittent flow of golden yellow, alkaline, typical duodenal contents.

3. The fluoroscopic location of the bulb.

Normally the return flow of duodenal contents from the tube is a slow drip, intermittent in character, varying from a thin watery to a viscid fluid. Using a tube the capacity of which was 4.5 c.c. and considering the foregoing rate and character of flow, it required from two to five minutes for a given drop to travel from the duodenum to the distal end of the tube.

In order to obtain a constant drip, it was necessary at the beginning of the test to give the patient 500 c.c. of cool water by mouth. With the patient lying on his right side, a continuous drip of from 60 to 80 drops a minute of bile stained rather thin flow is obtained over a period of from a half to three quarters of an hour. This gives ample time to carry out the test.

At intervals of approximately two minutes, the character of the flow changes and there is an ejaculation of thicker, darker bile stained contents. With the establishment of this constant drip, the dye was injected in the following manner and the time of injection recorded:

Intravenous Injection of the Solution.—This was performed with a tuberculin syringe containing 1 c.c. of the solution, representing 50 mg. of the dye. As the color of the dye masks the appearance of the blood in the syringe, it was found best to insert the needle only into the lumen of a prominent vein of the forearm and then connect the syringe and slowly inject its contents.

Collection of the Contents.—The drip is allowed to run into a white porcelain dish containing a 40 per cent. solution of sodium hydroxid. In order to remove any uncertainty in deciding at what time the color change occurred, fresh alkaline solution was used in a clean dish every two minutes. The initial appearance of the dye is indicated by a faint purplish red ring at the point of contact of the contents and alkali. This color change became more marked and intense with the elapse of time, until it reached its maximum. At this time our readings were taken.

PATHOLOGIC CASES

Case 1.—S. K., a woman, aged 46, who had typhoid at 25, with no complications, had complained for three months of lack of appetite, loss of ambition, of being easily tired, dull headache, malaise and transient jaundice. The pulse was 80, the temperature 100.8, the respiration 20. She had severe headache, pain of a dull character in the right hypochondriac region, chills, sweats and anorexia. The liver edge was palpable 3 inches below the right costal margin, very tender to deep palpation and to hammer percussion. Blood examination revealed leukocytes, 6,000. The blood culture was negative. The Widal test was negative. A pure culture of *B. typhosus* was found in the duodenal contents, and later a pure culture was obtained from the stool. Tetrachlor appeared in thirty minutes; on repetition of the test in eight weeks, the dye appeared in twenty-six minutes. The patient's physical condition remained the same. The diagnosis was: chronic cholecystitis and cholangeitis of typhoid origin; carrier.

Case 2.—A. S., a woman, aged 46, who had typhoid at 30, with no complications, complained for the last four years of pain in the right hypochondriac region through to the right scapular region, never severe or of colicky type. There was belching of gas, distress and discomfort after eating, and flatulence. One year before, she had slight jaundice. The liver extended 2 inches below the right costal margin; there was marked tenderness to deep palpation and hammer percussion over the liver. Laboratory findings were all negative; one pus cell was found in the duodenal contents; there were no organisms. The duodenum was lavaged with 25 per cent. magnesium sulphate six times in eight weeks. At the first tetrachlor test, before treatment, the dye appeared in thirty minutes. At the second tetrachlor test, during treatment the fourth week, the dye appeared in twenty-two minutes. At the third test, the ninth week, the dye appeared in twenty minutes. When she was discharged, the patient was greatly improved in all respects. The diagnosis was: chronic cholecystitis and cholangeitis.

Case 3.—A. L., a woman, aged 54, complained of nausea, pain in the epigastric region referred to the right shoulder, and attacks of biliary colic requiring morphin. Physical examination revealed deep jaundice, marked tenderness over the liver and gallbladder regions, and right rectus spasm. There was typical putty stool, with occasional traces of bile on some days. The urine contained bile. The leukocytes numbered 10,000. The duodenal contents were very slightly bile stained; they contained no organisms, but an occasional pus cell. At the tetrachlor test, a very faint trace of dye appeared at seventy-five minutes. Operation revealed a common duct stone causing partial obstruction. The diagnosis was cholelithiasis.

Case 4.—M. W., a woman, aged 26, was seized ten days previous to entering the hospital, with a sharp, severe pain in the epigastric region, referred to the right shoulder, chills, nausea and vomiting. Later she developed a constant dull pain in the right hypochondriac region. Physical examination revealed jaundice and marked tenderness over the liver and gallbladder regions. The liver edge was palpable 3 inches below the right costal margin. There was upper right rectus spasm. The urine contained bile. There was a typical putty stool. The leukocytes numbered 11,000. This case was diagnosed as one of acute cholecystitis and cholelithiasis, and operation was performed accordingly. The gallbladder and ducts were normal. The liver was greatly enlarged, was smooth, and resembled the liver found in acute infections. The possibility of syphilis as an etiologic factor was advanced by the surgeon. Cholecystotomy was performed. A four plus Wassermann reaction was obtained on the blood. The first tetrachlor test was made one week after operation; the dye appeared in thirty-five minutes. In the interval of three weeks, three injections of arsphenamin of

V. 7
1921

0.5 gm. each were administered, and eight hypodermic injections of 0.01 gm. of mercuric chlorid were given. At the end of this time the dye appeared in sixteen minutes. There had been a complete subsidence of all symptoms and signs.

CASE 5.—J. G., a man, aged 42, complained of general pruritus, dyspnea, a sensation of fulness in the abdomen, dark urine, and cough. He had drunk considerable liquor for many years. Physical examination revealed jaundice. The liver extended 7 inches below the right costal margin. The edge was firm and sharp, not tender. The spleen extended 2 inches below the left costal margin. The knee jerks were absent. The hemoglobin was 65 per cent.; erythrocytes, 3,600,000. Gastric fractional examination revealed slightly diminished secretion. The duodenal contents, spinal fluid, colloidal gold test and blood Wassermann test were negative. The urine contained one plus albumin and frequent casts. Renal functional tests were negative. The gastro-intestinal roentgen-ray examination was negative. The diagnosis was cirrhosis of the liver, possibly of a syphilitic type. Six injections of arsphenamin of from 0.4 to 0.5 gm. were administered; also mercuric chlorid by injection. The abdominal distention diminished; the size of the liver decreased about 1½ inches, and the spleen 1 inch. The jaundice faded considerably. The tetrachlor test was made at this time and the dye appeared in forty-two minutes.

CASE 6.—M. G., a man, aged 18, complained of jaundice and occasional nose-bleed. The father and sister had yellow tinged sclerae; the uncle (paternal side) was jaundiced. The patient had pneumonia three years before, complicated by empyema, for which drainage was performed. The sclerae had been jaundiced as far back as the patient could recall. It varied in intensity, but was not associated with alterations in the general health. The stools were never of putty-like consistency. There was occasional indefinite pain in the abdomen. The temperature was 97, pulse 80, respiration 20. The skin was dark and slightly icteric; the sclerae, yellow. There was enlargement of the cervical, epitrochlear and inguinal lymph nodes. The liver was enlarged, the edge palpable 3 inches below the right costal margin, smooth, not tender. The spleen was enlarged and the edge palpable 2½ inches below the left costal margin. Hemoglobin was 65 per cent.; erythrocytes, 3,900,000; leukocytes, 22,000; differential, negative. The Wassermann reaction was negative. In the urine an occasional hyaline cast was noted. Fragility test of the erythrocytes revealed: Initial hemolysis at 0.52 per cent. (normal, from 44 to 46); complete hemolysis at 0.40 per cent. (normal, from 34 to 36). Red cells were more fragile to a moderate degree than normal, suggesting hemolytic jaundice. In the tetrachlor test the dye appeared in fifteen minutes. The preoperative diagnosis was hemolytic jaundice. At operation an enlarged, smooth spleen was removed. The liver, gallbladder and ducts were negative. The pathologic report on the spleen stated that there was a resemblance to thyroid structure except that the acini were very irregular in outline. "Conclusion, probably lymphangioma."

TABLE 1.—RESULT OF TEST IN SIXTEEN CASES*

Case	Age	Clinical Diagnosis	Minutes of Time of Appearance of Dye	
1. U. M.	45	Chronic myocarditis	14	2
2. G. P.	54	Chronic interstitial nephritis	14	
3. F. K.	19	Chronic appendicitis	15	5
4. I. G.	23	Epidemic encephalitis	15	
5. L. W.	28	Convalescent pneumonia	15	
6. G. H.	57	Chronic myocarditis	15	
7. H. L.	28	Gonorrheal arthritis	15	
8. J. C.	48	Malarial fever	16	2
9. A. M.	54	Infective arthritis	16	
10. J. M.	34	Hypo-acidity	17	1
11. M. W.†	39	Convalescent typhoid	18	3
12. B. S.	26	Follicular tonsilitis	18	
13. G. L.	34	Gonorrheal arthritis	18	
14. G. P.	52	General arteriosclerosis	19	1
15. C. P.	25	Sacro-iliac subluxation	20	2
16. V. S.	33	Malingering	20	

Total cases, 16 — Average time, 17.2 minutes

* Condition of liver, negative; free edge not palpable; no tenderness on deep palpation, or moderate hammer percussion.

† Unable to elicit any pathologic condition of liver. Pure growth of B. typhosus obtained from duodenal contents.

CASE 7.—H. K., a man, aged 31, had diabetes for two years; he never received treatment. He had never had attacks of biliary colic. He complained of distress in the epigastric region immediately after the taking of food; distention of the abdomen; loss of weight and polyuria. Physical examination revealed slight jaundice. There were evidences of loss of subcutaneous fat. The skin was dry and scaly. The abdomen was slightly distended. The liver edge extended 2 inches below the right costal margin; it was tender to deep palpation. There was moderate ascites. The spleen was not palpable. On admission, the urine contained 119 gm. of sugar in twenty-four hours. The blood sugar was 400 mg. per hundred cubic centimeters. Three months later, at time of discharge, the urine was sugar free; the blood sugar, 110 mg. per hundred cubic centimeters. Gastric analysis and the Wassermann reaction were negative. In the tetrachlor test the dye appeared in twenty-three minutes. The diagnosis was diabetes mellitus with a possibility of hemochromatosis.

TABLE 2.—RESULT OF TEST IN THREE OPERATIVE AND FOUR NONOPERATIVE CASES

	Case	Age	Preoperative Clinical Diagnosis	Operative Findings	Liver*	Dye Time
Operative						
17.	A. L.	54	Cholelithiasis	Stone in the common duct	T	75—Faint trace
18.	M. W.	26	Acute cholecystitis	Syphilitic hepatitis	S-T	35—10†
19.	M. G.	18	Hemolytic jaundice	Splenomegalia	S	15
Nonoperative						
	Case	Age	Clinical Diagnosis		Liver	Minutes of Time of Appearance of Dye
20.	S. K.	46	Typhoid cholecystitis; cholangeitis		T-S	30—26‡
21.	A. S.	46	Chronic cholecystitis; chronic cholangeitis		T-S	30—22½—20¶
22.	J. G.	45	Syphilitic cirrhosis		S	42
23.	H. K.	31	Diabetes mellitus; hemochromatosis		S-T	23

* S signifies increase in size of liver; T signifies tenderness over liver elicited by deep palpation and moderate hammer percussion.

† Sixteen minutes is time of dye appearance three weeks later after antisyphilitic treatment.

‡ Twenty-six minutes is time of dye appearance eight weeks later with no change in condition of patient. Pure growth of B. typhosus secured in the duodenal contents.

§ Twenty-two minutes is time of dye apearance four weeks after treatment.

¶ Twenty minutes is time of dye appearance nine weeks after treatment.

CONCLUSIONS

1. The fecal tetrachlor test is a disagreeable and difficult procedure to carry out.

2. For some reason the duodenal time tetrachlor test has been neglected, especially when we consider the importance that is attached to the time of the appearance of the phenolsulphonephthalein or indigocarmin in the catheterized renal functional test.

3. We have prepared a stable preparation of tetrachlor which has undergone no deterioration in eight months.

4. The establishment of a drip by the administration of water by mouth in no way interferes with the test, as the experimental figures on animals showed that when water by mouth was excluded or allowed, it did not alter the time of appearance of the dye. Fear and nervousness were partially eliminated as a factor by the length of time the tube was inserted, thereby giving the patient ample opportunity to become accustomed to it.

5. The end-reaction is clear and distinct, and makes it a simple matter to decide at which point the dye is maximum.

6. The nonpathologic cases give the following averages: two cases, fourteen minutes; five cases, fifteen minutes; two cases, sixteen minutes; one case, seventeen minutes; three cases, eighteen minutes; two cases,

twenty minutes. Total cases, sixteen. Average time for all, seventeen and two-tenths minutes.

7. The pathologic cases, not including the common duct obstruction case, definitely give delayed figures, the average being thirty-two minutes. We believe that the estimation of the dye excreted in a given time is of no value on account of the leakage of contents into the intestine below.

8. If the time of the first appearance of the dye is more than twenty minutes, we believe one should be suspicious of hepatic involvement.

9. In surgical cases it may be of value in determining how much parenchyma damage has been done to the liver, which is one of the important factors in estimating shock liability.

10. In our cases it has been an indication of improvement of liver function and corresponds to Whipple's experimental findings.

11. The appearance of the dye in fifteen minutes in the contents shows that, despite which procedure for fractional duodenal analysis is followed, bile from the liver is present from that time on.

12. If the dye fails to appear within thirty minutes, it is necessary to give additional water by mouth to maintain the drip.

13. It demonstrates the presence of the tube in the duodenum.

We regret the small number of cases presented, but we present what data we have in order to call attention to a readily performed liver functional test and to stimulate the collection of further observations.

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ABSTRACT OF DISCUSSION

Dr. George B. Eusterman, Rochester, Minn.: This paper is of interest to me because a colleague, Dr. Rowntree, in collaboration with Dr. Whipple and others, has fathered this particular test. As Dr. Aaron has pointed out, this earlier work involved a cumbersome technic which made the procedure impracticable for general clinical purposes. As a result of his investigations Dr. Rowntree, among other things, concluded that the factor of safety in the liver, as in most other glands, was great; chiefly in those cases in which large portions of the liver parenchyma were replaced by metastatic deposits did functional tests give definite information, and in those cases the clinical evidence was often sufficient. Inasmuch as Dr. Aaron has mentioned McNeil's work in 1916 I shall not go into the results of his observations here. In view of the fact that this work was done along lines similar to Dr. Aaron's it seems to me that we have been indifferent in not developing the method sooner. I would like to ask Dr. Aaron how practical the procedure is in cases of common duct obstruction by stone, stricture or new growth. It is this type of case in which tests of the functional capacity of the liver are most important because of dangers connected with surgical interference. It might be of interest here to state that Dr. Rowntree and his colleagues have for some time been carrying out other hepatic tests, several of which seem to be promising. Among these are the gelatin and glycocoll test first reported by Dedichen of Christiania, the provocative amino-aciduria test of Kimberg, the residual nitrogen test of Poxilli, and the camphor test of Roger; the latter determines the detoxicating function of the liver measured by the decreased elimination of conjugate glyceronates; and finally the hemoclasis crisis test, which I understand, however, has been recently discontinued by Widal himself. The conception of "dissociate icterus" will undoubtedly serve as a basis of future progress in the clinical studies of jaundice. We have not routinely adopted the method of Hoover and Blankenhorn in the clinic. But I can see the important practical application in helping to solve the pathologic process or source of obscure cases of jaundice when the usual clinical procedures, in addition to examination of the duodenal contents, are not sufficiently informative.

A discordance of opinion as to the mechanism of the production of jaundice in various conditions was revived, as shown by McNee, in studies connected with spirochetal jaundice. I hope that this newer method will help solve an ever recurring diagnostic problem in connection with that type of severe icterus in which the preoperative evidence strongly suggests obstruction of the larger bile ducts but exploration or necropsy shows the condition to be entirely confined to the liver (hepatogenic) and the ducts practically free of bile. A second problem about which much controversy is centered, and much conflicting evidence has been submitted, is the pathogenesis of late jaundice following arsphenamin therapy, and invariably terminating favorably. In this connection, in addition to the researches of Stokes, my attention has been called to the investigations of Bailey and MacKay. The latter showed that bile pigment was retained by the blood plasma in large amounts long before its appearance in the tissues. Their conclusions with respect to the cause of the jaundice—in their opinion a cumulative toxic hepatitis—and the explanation for its delayed appearance are instructive.

Dr. Abraham H. Aaron, Buffalo: If there is a blockade of the duct I doubt that there would be any value to the test. Crile has brought out the question of the liver in shock, and this test may be of value in ascertaining the activity of the liver. In enlargement of the liver and spleen it might help in demonstrating whether or not the liver was primarily involved. The dye appears in the duodenal contents fifteen minutes after injection. We are now working on cases in which the gallbladder has been removed. We are getting bile from the liver all the time. We believe our tests prove that bile from the liver reaches the duodenum fifteen minutes after the test is begun.

PREGNANCY AFTER NEPHRECTOMY*

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It has long been considered a settled fact that after recovery from the operation of nephrectomy has been complete and the compensatory changes taken place in the remaining kidney, the expectancy of life is the same as for a person who possesses two good kidneys. But, in the case of a woman in the child-bearing age who is nephrectomized, what happens if pregnancy supervenes? This becomes a very important question particularly, nowadays, when the urologic as well as other surgeons are very keen on the diagnosis of kidney lesions and very eager to perform nephrectomy. Indeed, nephrectomy is done from three to four times more frequently today than it was ten years ago. However, notwithstanding this fact, pregnancy is of rare occurrence, owing, it would seem, to a general lack of knowledge regarding the capability of the remaining kidney. It has long been thought by the average physician, as well as by many specialists of obstetrics, that nephrectomy should preclude pregnancy; and therefore, they have without further investigation or thought on the subject persistently recommended the termination of the pregnancy, as soon as the diagnosis could be established. In what is to follow I shall endeavor to show that such advice in the majority of instances is erroneous and that in properly selected cases pregnancy after nephrectomy is a perfectly safe proposition.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

Most obstetricians are agreed that pregnancy is a pathologic process; and that there is an increased load thrown on the kidneys during pregnancy and labor, is at present universally recognized. Whether these statements are accepted in toto or not, the fact remains that a woman on whom nephrectomy has been performed and who subsequently becomes pregnant undoubtedly subjects her remaining kidney to a certain amount of excess work. But, it may be argued, the remaining kidney compensates for the loss of its mate, becomes hypertrophied, and within from twenty to twenty-five days, as determined by Tuffier,[1] Paolo-Fioro, Simon[2] and others, gives the individual all the services required of two kidneys. In fact, in a large number of nephrectomized subjects, hypertrophy of the remaining kidney is already developed even before the ablation of the diseased kidney; and urinary function is therefore not materially decreased for any length of time. This explains why nephrectomy for "pus kidney," for example, where no parenchyma remains, does not cause an immediate appreciable decrease in the urinary output, whereas, in early unilateral renal tuberculosis where there may be considerable parenchyma remaining, there is a marked decrease in urinary function until the remaining kidney is able to compensate for the loss of its diseased fellow. Physiologists have known for many years that the total amount of renal tissue possessed by each individual is considerably in excess of his dire needs, three or four times, which is another reason why otherwise healthy nephrectomized subjects "carry on" in such a remarkably efficient manner.

Pousson[3] called attention to the fact that:

> There exists only a very small number of histologic examinations of the remaining kidney, but all those which have been made show that the increase in volume relates less to the interstitial tissue than to the glandular tissue, so that we have under consideration a condition of true hypertrophy. And furthermore, chemical and histologic examination of the urine, as well as the tests with methylene blue, phenolsulphonephthalein, phlorizin and with other substances designed to give information as to the renal permeability reveal in the majority of cases a complete return of renal function; and this is just as true when nephrectomy has been performed for the infectious diseases, e. g., tuberculosis, as when it is performed for conditions which do not affect the anatomic elements of the kidney, e. g., trauma. Urea, the chlorids, the phosphates and uric acid are eliminated in normal quantities and undergo all the variations which elimination, exercise, fatigue, etc., are capable of causing. The urine is free of albumin. In the sediment examined there can be found no leukocytes, blood clots or renal epithelium.

But such is not always the case, for in a goodly number of subjects that have been nephrectomized one can find, even many years after the operation, urinary trouble both quantitative and qualitative. Crabtree[4] and Cabot, for example, observed that twenty-nine patients out of ninety-nine cases of nephrectomy for renal tuberculosis showed albumin in the urine—twenty-five a trace and four a large amount—from five to fifteen years after nephrectomy. In fact, the same authors state that in about 35 per cent. of their cases of renal tuberculosis there remained legacies of the disease in the form of abnormal urine and persistent symptoms, e. g., pus in urine, traces or cloud of albumin, irritable bladder, etc. But it must be remembered that renal tuberculosis is in many respects the most serious of all kidney affections, which fact would lead one to look on renal tuberculosis with grave suspicion in those cases in which pregnancy is likely to supervene. In fact, such authorities as Hartmann,[5] Bar, Baldwin,[6] Spire and Boeckel,[7] Stoeckel[8] and others are agreed that a woman who has had nephrectomy for renal tuberculosis must be looked on with apprehension if pregnancy supervenes, but state that if a period of from two to four years has elapsed without the reappearance of symptoms, pregnancy may be allowed to take place with safety. Likewise, Kümmel[9] of Hamburg maintains that the same may be said regarding pregnancy after nephrectomy for malignant tumors of the kidney; but other authorities, notably Israel,[10] hold that pregnancy should never be allowed to progress after nephrectomy for renal malignancy. Believing, as I do, that malignant disease of any organ will, in all probability, recur "sometime, somewhere," it would seem wise to recommend the termination of a pregnancy occurring after nephrectomy for unilateral malignant disease of the kidney.

Thus far we have considered pregnancy after nephrectomy only in those cases in which there may be recurrence of the trouble for which nephrectomy was performed, therefore contraindicting the continuance of the pregnancy; but there are conditions for which nephrectomy must be done and in which there remains no likelihood of a recurrence of the trouble, such, for example, as pyonephrosis, nephrolithiasis, trauma cysts and nonmalignant tumors. In this class of cases the prognosis, particularly as to pregnancy, is much better than after unilateral tuberculosis or malignant disease of the kidney. As has been stated above, the compensatory hypertrophy of the good kidney in these cases has usually already taken place to a considerable extent when nephrectomy is performed, so that the total urinary function is not materially decreased for any length of time following operation. It thus becomes very evident that the remaining kidney is physiologically competent and, therefore, pregnancy may supervene without danger. But suppose that a severe toxemia (pre eclampsia) or pyelonephrosis or pyelitis or an acute infection develops during the course of pregnancy after nephrectomy. Will the remaining kidney be able to carry the extra load superimposed by these pathologic states? Certainly not. Such a proposition demands immediate interference with the pregnancy and if, as in the case reported by Broadhead,[11] the pregnancy is progressed to or beyond the seventh month, cesarean section and sterilization should be done. Where such a procedure is not feasible, the pregnancy should be terminated by that method best suited to the case in question, and instructions given to the patient for the prevention of future pregnancies. There are certain types of the toxemia of pregnancy occurring in the woman with both kidneys that clear

1. Tuffier: Thesis Montville, Paris, 1905.
2. Simon, quoted by Hartman (Footnote 5).
3. Pousson: Am. J. Urol. **9**: 113, 1913.
4. Crabtree, E. G.: Surg., Gynec. & Obst. **21**, December, 1915.
5. Hartmann: Rev. prat. d'obst. et de pediat. **25**: 259, 289, 1912; Travaux de chirurgie anatomoclinique, Series 4, 1913, p. 455; Ann. de mal. gén.-urin., January, 1911.
6. Baldwin, H. A.: Ohio State M. J., Nov. 15, 1912, No. 11.
7. Spire, A., and Boeckel, A.: Ann. de gynec. et d'obst. **40**: 129-192 (March) 1913.
8. Stoeckel: Deutsch. Ges. Gynec., Halle, May, 1913; Surg., Gynec. & Obst., **17**, 1913.
9. Kümmel: Berlin letter, J. A. M. A. **60**: 1474 (May 10) 1913; Therap. d. Gegenw. **6**: 529 (Dec.) 1913.
10. Israel: Arch. f. klin. Chir. **47**: 392, 1894; Folia urol., 1911, p. 529.
11. Broadhead, G. L.: New York M. J. **111**: 974 (June 5) 1920.

up after the delivery of the fetus and which do not recur with subsequent pregnancies; but in the subject possessing only one kidney, it does not seem wise to permit subsequent pregnancies. Obviously enough, there may be, at any time during a pregnancy, superimposed an acute infection whose toxins would be sufficient to cause permanent serious damage to the remaining kidney, or death may supervene.

TABLE 1.—DATA IN THIRTY-SEVEN CASES COLLECTED FROM COLLEAGUES IN GREATER NEW YORK *

No. of Cases	Indications	Time Between Operation and Pregnancy	Kidney Removed: Right	Kidney Removed: Left	Side not Indicated
7	Pronephrosis	2 to 15 yrs.	4	1	2
11	Tuberculosis	1 to 5 yrs.	6	4	1
1	Congenital cystic	2 yrs.	..	..	1
4	Multiple abscesses	2 to 3 yrs.	3	1	
1	Acute hematogenous infection	2 yrs.	..	1	
1	Suppurative nephritis	3¼ yrs.	..	1	
2	Pyelonephritis	1½ to 2¼ yrs.	1	..	1
15	Not given	.....	..	..	15

* It will be noted that the right kidney was removed fourteen times and the left eight times, a ratio of almost 2:1 for the right. In six cases the side was not indicated. In fifteen cases no data were given.

In the thirty-seven collected cases herewith reported (Tables 1 and 2), cesarean section was done at the seventh month for a severe toxemia of pregnancy plus a pyelitis; three were induced between the seventh and eighth months for impending eclampsia; and one was aborted at three months for a severe pyelitis. There are three women out of the five whose remaining kidneys show, after one to three years, permanent damage in the form of a persistent nephritis. Obviously, there can be no argument as to the proper procedure in such cases.

Castaigne [12] reports the case of a woman who had a nephrectomy as a child, grew to womanhood, married, became pregnant, and was delivered without complications. Some weeks after delivery she died from severe grip infection. At necropsy her one kidney weighed 35 gm. The renal substance was much altered and there were many diffused sclerotic lesions. Thus, despite this small sclerotic kidney, only one-third its normal size, this woman had been able to live for many years, and went through pregnancy and labor without showing any evidences of toxemia; but when the grip infection was added, she succumbed because of the renal insufficiency.

TABLE 2.—ALBUMINURIA IN THIRTY-SEVEN CASES *

None	1+	2+	3+	4+	Boiled solid.
15	12	4	3	2	1

* Of these thirty-seven patients there were five women who had more than one pregnancy after nephrectomy; one had four with 1+ to 2+ albumin each time; two had two with 2+ to 3+ albumin each time; two had three with no albumin. Thus, there were forty-three pregnancies in the thirty-seven cases. There were five cases in this series whose pregnancies were terminated because of severe toxic symptoms. There were only eleven cases in this series that had blood pressure readings recorded, and only six of these had both systolic and diastolic.

Henri Hartmann of Paris has reported seventy-four cases of pregnancy after nephrectomy. Seventy-two of these women had from one to four pregnancies after their nephrectomy, with and without complications. Two cases aborted—one after repair of ureteral fistula, one during the course of a severe pneumonia. Two patients died—one of eclampsia and one of renal insufficiency. The remaining seventy patients went to term and, in spite of prolonged labor in several cases, due to contracted pelvis and cervical dystocia, the single kidney sufficed.

Pousson compiled sixty-six cases of pregnancy after nephrectomy, in seven of which the patients aborted and fifty-nine went to full term. Of those going to full term there were several who had to be delivered with forceps or by craniotomy. There were no maternal deaths. All the mothers nursed their babies, and one mother acted as a wetnurse.

Baldwin of Columbus, Ohio, has reported six cases of pregnancy after nephrectomy without complications. One mother died three months after labor of acute pulmonary tuberculosis.

Andrews of Paris has reported the case of a woman who passed through five successful pregnancies without complications following a nephrectomy.

Spire and Boeckel have reported three cases of pregnancy after nephrectomy without complications. There was no albuminuria at any time during their pregnancies, and delivery was accomplished without difficulty. Pregnancy occurred within from twenty months to three years after nephrectomy. Lactation was not interfered with, and consequently nursing was continued without detriment to mother or child. The authors conclude that nephrectomy for unilateral renal tuberculosis is undoubtedly the correct procedure, and that if the remaining kidney remains healthy for two or more years after operation, it is perfectly safe to allow pregnancy.

TABLE 3.—TWO HUNDRED CASES COMPILED FROM THE LITERATURE *

	No. of Cases	Complications	Died
Hartmann [3]	74	2	2
Pousson [5]	66	7	0
Israel [10]	29	0	0
Kümmel [9]	17	0	0
Baldwin [6]	6	0	0
Spire and Boeckel [7]	3	0	0
Andrews	1	0	0
Castaigne [12]	1	0	0
Broadhead [11]	1	1	0
Schramm †	1	0	0
Tredondani ‡	1	0	0

* In the twenty-nine cases reported by Israel there occurred thirty-nine labors without complications. The patient of Andrews passed through five pregnancies without trouble. Thus, in 200 cases there occurred 215 labors, in ten of which there were complications and two patients died.

† Berl. klin. Wehnschr., 1898.

‡ Ann. d'Obst. et gynéc.

Israel, observing thirty-nine labors in twenty-nine nephrectomized women for renal tuberculosis, comes to the conclusion that pregnancy follows its normal course, that labor proceeds in a normal manner, and that lactation is not interfered with.

Kümmel investigated the late fate of 386 patients, male and female, following nephrectomy, and found that of this number there were seventeen women who had borne children after the removal of one kidney. One of these patients had a severe nephritis, and one had premature labor. The remaining fifteen women passed through pregnancy and labor without complications. He states that permission to marry may be given to women after nephrectomy for tuberculosis and for malignant tumors if they have remained free of symptoms for from two to four years, respectively.

There is little to be said regarding the progress of labor in the nephrectomized subject for, naturally, other conditions being normal, we would expect labor

12. Castaigne, quoted by Pousson (Footnote 3).

to take place in the usual manner. This it does. Furthermore, nephrectomized patients stand morphin and ether anesthesia exceedingly well, and therefore the labor may be managed in a painless manner, just as any labor should be conducted.

Chloroform should never be used for reasons which need no elucidation. It is claimed by some authorities, notably Kümmel, that such patients bear chloral hydrate, barbital and kindred drugs badly, which would to some extent inhibit the conservative treatment of eclampsia in the nephrectomized subjects.

Judging from published reports, personal communications from my colleagues, and from personal experience, lactation in the nephrectomized subject is not interfered with and consequently the mother may nurse the baby in the usual manner. If the nephrectomy was done for unilateral tuberculosis and the mother is below par as regards her general health or signs of tuberculosis develop elsewhere in the body, then, of course, nursing should be prohibited.

The question of marriageability of the young woman on whom nephrectomy has been done may come up for consideration. What shall determine the answer? If sufficient time has elapsed since the nephrectomy to insure proper function of the remaining kidney, marriage may be allowed. If the nephrectomy was for unilateral renal tuberculosis and a complete cure has been accomplished as shown by freedom from symptoms for a period of three years or more, marriage is still permissible. If symptoms of tuberculosis in the remaining kidney or elsewhere should appear after marriage, pregnancy should not be allowed until such symptoms have disappeared and the patient has remained well for three or more years. When a nephrectomy has been done for malignant tumor of the kidney, marriage is permissible; but it is very doubtful whether pregnancy should be allowed to take place. There is great likelihood of a recurrence of the malignancy at some future time, in which case the mother's life is lost and the child's future happiness materially jeopardized.

REPORT OF CASES

CASE 1.—Mrs. L. E., aged 40, German-American, tall and thin, whose family history was negative and whose menstrual history was normal in every respect, had been married eighteen years and had had two children, the oldest aged 14 years and the youngest 3 weeks. The labor and puerperium had been normal. Two miscarriages had occurred, the first in 1906 when she was curetted at the eighth week of pregnancy because her physician thought a woman with only one kidney should not continue her pregnancy, and the second in 1908 for the same reason. One operation had been performed twelve years before for acute appendicitis and chronic right ovaritis, at which time she had an appendectomy and right oophorectomy. Six months later she was operated on for right hydronephrosis. Nephrectomy was done. The wound became infected and drained for about four months. Three months later, that is, in July, 1903, the right kidney was removed and pathologic examination proved it to be tuberculous, which explained the fistulous drainage after her first operation, six months previous. The wound after this operation healed by primary union, and following this she had a severe chronic nephritis of the left kidney which persisted for several years and finally entirely cleared up. She probably did not have pulmonary tuberculosis, for she had many physical examinations of her lungs and no signs were ever found. Twelve years after her nephrectomy (right), that is, June 15, 1914, the patient was seen by me, for the first time, eight weeks pregnant. She was very anxious to have a child, and I thought it would be safe to let her continue until some signs of kidney disturbance showed itself. The urine was negative. The blood pressure was: systolic, 135, diastolic, 100. Her general condition was good. The urine was examined every two weeks during the entire pregnancy and was negative until eight and a half months, after which there was a trace of albumin. The systolic blood pressure remained between 130 and 135, the diastolic between 90 and 100. She was confined by her family physician at full term, Feb. 4, 1915, after having three and one-half hours of labor. The delivery was perfectly normal and she remained in bed ten days. A follow-up examination, February 26, showed her to be in excellent general condition and the urine negative.

CASE 2.—Mrs. K., aged 32, Jewish, came to me with a history of having had the right kidney removed for tuberculosis eight years before by Dr. Victor C. Vaughan of Ann Arbor, Mich., and presenting a letter from Dr. Vaughan substantiating her statements. She was at this time seven months pregnant. Her urine showed: specific gravity, 1,020; trace of albumin; no sugar; no casts; pus in large quantities; no tubercle bacilli as determined by guinea-pig inoculation. She had a normal labor and an uneventful puerperium. In December, 1916, I again saw her, and at this time she had a temperature of 99.4, night sweats, loss of weight, a severe tuberculous cystitis and questionable signs of pulmonary tuberculosis. She was sent to the country and advised to remain until well. She presented herself to me, March 2, 1919, three years later, again pregnant at the eighth month. During the interim, almost three years, she said she had been in good health. The urine at this time showed a heavy trace of albumin, which persisted some weeks after delivery, but was otherwise negative. The blood pressure was: systolic, 130; diastolic, 90. She was confined, April 14, and had a normal labor and a normal puerperium. A follow-up examination, September 30, showed her to be as well as usual, her only complaint being pain in the left kidney region and general malaise. There was no cough or fever, and no loss in weight. The urine showed a heavy trace of albumin, few casts, and considerable pus. I have examined her many times since, and her urine still shows a heavy trace or cloud of albumin and many hyaline and granular casts. The blood chemistry, taken June 5, 1921, shows: urea nitrogen, 50; urea, 107; sugar, 83; uric acid, 4.15; creatinin, 1.76 per hundred cubic centimeters, which means that she has a badly damaged kidney and certainly should not become pregnant again.

CASE 3.—Mrs. M. S., Irish-American, aged 24, married, mother of three children, who had had no miscarriages, and who had always been well except that she had severe bronchopneumonia four months before, was admitted to the genitourinary department of the Long Island College Hospital, March 3, 1917, with a diagnosis of chronic nephritis. After a careful survey, a diagnosis of right suppurative nephritis was made and nephrectomy performed, March 9, 1917, by Dr. Henry Morton. She was about five and a half months pregnant at this time. She made a good recovery and was discharged in good condition, April 3. She went to term and was confined at the Long Island College Hospital, July 20. The urine remained negative until the last three weeks of her pregnancy, when she had a faint trace of albumin but no casts. The baby weighed 3,820 gm. The puerperium was afebrile, and her condition on discharge was excellent. She was again admitted to the Long Island College Hospital, Oct. 23, 1918, pregnant at term and in labor. The urine showed a trace of albumin. The systolic blood pressure was 120; diastolic, 80. After six and one half hours of labor she had spontaneous delivery. The baby weighed 2,380 gm. and measured 50 cm. in length. The puerperium was afebrile and her condition was excellent on discharge. Nov. 1, 1920, she presented herself at the prenatal clinic of the Long Island College Hospital in the fourth month of her second pregnancy since the right kidney was removed in 1917. The urine was negative and her blood pressure, systolic, 115; diastolic, 85. On her return visits every two weeks the urine remained negative until Jan. 18, 1921, when she showed a heavy trace of albumin, with pain and tenderness over left ureter and kidney. January 22, four days later, she was admitted in labor to the Long Island College Hospital with a diagnosis of acute pyelitis on the left side. The urine showed a heavy

trace of albumin and few pus cells but no casts. The systolic blood pressure was 100; diastolic, 48. Blood count revealed: red blood cells, 3,704,000; white blood cells, 13,940; polymorphonuclears, 86 per cent. A culture from a catheterized specimen of urine showed a small growth of *Staphylococcus aureus;* intravenous phenolsulphonephthalein, 60 per cent. in one hour. Blood chemistry showed: urea nitrogen, 10.7; urea, 22.9; uric acid, 3.33; creatinin, 1.50; sugar, 100 per hundred cubic centimeters. She continued in labor, having weak, irregular pains. Eight hours later she began to have good strong labor pains, and in two hours she delivered a premature female child, seventh month, weighing 2,344 gm. and measuring 44.5 cm. in length. Her highest temperature was 100.6 on the third day, and following this she had no further trouble. Mother and baby discharged in good condition on the nineteenth day postpartum. The mother's urine was negative on the day of discharge. A follow-up examination, May 30, 1921, revealed the urine negative and the mother in excellent health.

CASE 4.—Mrs. M. N., aged 31, admitted to the Methodist Episcopal Hospital, July 18, 1916, at term and in active labor, had had a left nephrectomy in July, 1912, for tuberculosis of the left kidney and ureter. On admission the systolic blood pressure was 132, the diastolic 70, and the urine showed + + albumin, no casts or pus. Examination revealed the breech presenting in the left sacro-anterior position, fetal heart 132 left upper quadrant, and regular. After five hours of good labor a live baby weighing 8 pounds was delivered by the breech. Six days after the confinement the urine showed only + albumin and no casts. She was discharged in good condition on the thirteenth day after delivery, at which time her general condition was excellent and the urine negative. No follow-up examination has been made since her discharge from the hospital.

Tables 4 and 5 show in condensed form the important data collected from the four personal cases.

TABLE 4.—ALBUMINURIA IN FOUR PERSONAL CASES

1+	2+	3+	4+
1	1	1	1

Of the four personal cases there was one woman who had three babies and one who had two babies after their nephrectomy. With each pregnancy there was an albuminuria of from + to + + + +. These four women had a total of seven pregnancies with seven living babies, all of which nursed.

TABLE 5.—INDICATIONS FOR NEPHRECTOMY IN FOUR PERSONAL CASES

No. of Cases	Indications	Time Between Operation and Pregnancy	Right Kidney Removed	Left Kidney Removed
1	Tuberculosis	12 years	1	..
1	Tuberculosis	8 years	1	..
1	Suppurative nephritis	1½ years	1	..
1	Tuberculosis	4 years	..	1

TABLE 6.—BLOOD CHEMISTRY

Case	Pregnant	Mg. per 100 C.c.	Case	Nonpregnant	Mg. per 100 C.c.
1	Urea nitrogen	18	1	Urea nitrogen	17.6
	Sugar	100		Urea	37.7
	Creatinin	1.5		Uric acid	3.55
				Sugar	125
				Creatinin	1.2
2	Urea nitrogen	10.4	2	Urea nitrogen	18.2
	Sugar	80		Urea	38.9
	Creatinin	1.3		Sugar	100
				Creatinin	1.2
3	Urea nitrogen	10.7	3	Urea nitrogen	50
	Urea	22.9		Urea	107
	Uric acid	3.33		Sugar	83
	Sugar	100		Uric acid	4.15
	Creatinin	1.5		Creatinin	1.76

In the four personal cases the right kidney was removed three times, the left once—a ratio of 3:1 for the right.

Table 6 shows the result of the blood chemistry in three pregnant and three nonpregnant nephrectomized women. Basal metabolism determinations were not done in any of these cases.

Of the three pregnant women, Patient 1, four months pregnant, shows a normal urea-nitrogen, while Patients 2 and 3, pregnant seven and eight months, respectively, show a characteristic low urea nitrogen.

Of the nonpregnant women, Patient 3 shows marked renal insufficiency and therefore should not become pregnant again.

SUMMARY OF TABLES

In the 200 cases compiled from the literature, there were 215 labors, in ten of which there were complications and two patients died; in the thirty-seven cases compiled from Greater New York City there were forty-three labors, in four of which there were complications and no deaths; in the four personal cases there were seven labors with no complications and no death, thus making a grand total of 265 labors occurring in 241 nephrectomized women. In the 265 labors, there were fifteen complicated and 250 normal, with only two deaths.

From this study the following conclusions may be formulated:

CONCLUSIONS

1. Pregnancy after nephrectomy follows its normal evolution.

2. Pregnancy after nephrectomy is but little more hazardous to mother or child than pregnancy under normal conditions, provided the remaining kidney is functioning properly.

3. Albuminuria of slight, moderate or marked degree occurs in a certain proportion of the cases of pregnancy after nephrectomy, during the last four or six weeks, which under appropriate treatment usually clears up. In the thirty-seven collected and four personal cases herewith reported, 60 per cent. showed an albuminuria of from + to + + + + during the latter weeks of pregnancy.

4. When nephrectomy has been performed for unilateral renal tuberculosis, it is imperative that the patient be free from symptoms of tuberculosis in the bladder, ureter, remaining kidney and lungs or elsewhere for three years or more before pregnancy is allowed to supervene.

5. Pregnancy after nephrectomy for malignant tumors of the kidney should not be allowed under any circumstances.

6. Pregnancy after nephrectomy should be terminated immediately on the advent of frank renal insufficiency, as shown by the relation of the nitrogenous products in the blood and urine.

7. The likelihood of a severe "pregnancy pyelitis" or pyelonephrosis in the remaining ureter or kidney must be kept in mind, particularly if the remaining kidney be the right, and on the appearance of either condition immediate termination of the pregnancy is demanded.

8. Labor in pregnancy after nephrectomy takes place without complications referable to the remaining kidney.

9. Lactation is not interfered with and therefore, except for special reasons, nursing should be carried on in the usual manner.

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1921

10. Marriage is permissible in nephrectomized women, provided the remaining kidney has functioned in a normal manner for one year or more. If the nephrectomy was for unilateral renal tuberculosis and a complete cure has been accomplished, as shown by the absence of symptoms in the remaining kidney or elsewhere for three years or more, marriage is still permissible.

11. Finally, there is urgent need for a more scientific and systematic study of the nephrectomized woman, both in the nonpregnant as well as in the pregnant state. A well "worked up" report, including all laboratory methods for the determination of kidney function and urinary excretion, should be published of every case of pregnancy after nephrectomy.

643 St. Mark's Avenue.

ABSTRACT OF DISCUSSION

DR. JOHN O. POLAK, Brooklyn: That nephrectomy has increased, there is no question. As a result, these women are brought to us pregnant, and the question is asked, Shall the pregnancy continue? In deciding about what shall become of the pregnancy, one very important point has to be determined: What pathologic condition was the original nephrectomy done for? The kidney is competent to take on the work of the other kidney, unless the disease for which the kidney was removed has a tendency to be bilateral. This assumption of the work of the other kidney is gradual. And there, again, an interval should occur before a woman becomes pregnant after nephrectomy. How are we to test these cases as to the competence of the remaining kidney? It is not by the phenolsulphonephthalein test, because, while there is an excess of kidney tissue in all kidneys, yet when a kidney has been diseased, if that disease has been of long standing, there has been gradual compensation, but we are not cognizant of the amount of reserve that that kidney has after it has compensated. Therefore, not only shall we have to resort to the kidney concentration tests which show the reserve of the kidney, but we must also find what is retained by the blood. Another point one must remember is that normally in pregnancy the basal metabolism is materially increased; that the basal metabolism drops again when the baby is delivered, or when the baby dies. Is this kidney competent to maintain this metabolism? Statistics are of very little importance. In the cases in which the work was done thoroughly, it was interesting to note the comparison in the study of the blood chemistry in the women now pregnant and those not pregnant. And this is a very important point in determining whether this particular woman should become pregnant, because these women who have a disturbed blood chemistry, notwithstanding the fact that the kidney may have been removed for some cause which was not a bilateral condition, are in constant jeopardy because of the insufficiency of the kidney to function.

DR. GORDON G. COPELAND, Toronto, Canada: My own investigations have shown that infections are evident in about 75 per cent. of cases. Dr. Matthews has just mentioned the fact that when one is doing abdominal delivery of a viable child for preeclamptic conditions, it would be advisable to sterilize the woman. I have not had sufficient experience to criticize that, but I should just like to draw his attention to the fact, and ask his opinion, that if in view of the fact that the removal of foci of infection has so frequently been followed in subsequent labors by a comparatively normal pregnancy and labor, might it not be permissible to leave that woman for a subsequent pregnancy, instead of sterilizing her at that point? Because if that woman is toxic, seriously toxic, or in a preeclamptic condition, and that is her only baby, its chances of survival are small. Since the toxemia of subsequent pregnancies may become very much less, might it not be wise, if there is a reasonable doubt, to give the woman the benefit of the chance of a subsequent pregnancy?

DR. HARVEY B. MATTHEWS, Brooklyn: I would call your attention again to the importance of blood chemistry, and the accurateness with which it gives information regarding the efficiency of the kidney. Why sterilize in these preeclamptics? We have to remember that is the only kidney the woman has got. It is true we know that with two kidneys we have eclampsia, which does not occur with another pregnancy, depending on the type. If the proposition is put up to the woman, if she is a young woman with an only child, and she wants another one, she will take the chance. But as a general rule, I maintain that a woman with severe toxemia or preeclampsia should be sterilized.

FOUR YEARS' PROGRESS IN PUBLIC HEALTH ORGANIZATION IN OHIO

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COLUMBUS, OHIO

Since July 1, 1917, both the state and local systems of health administration in Ohio have been completely reorganized, and the new system has been in operation sufficiently long to appraise, at least provisionally, the success of the plan.

The state health department as now organized is composed of a public health council of five members, whose duties are legislative and judicial, and a commissioner of health who is charged with all executive and administrative responsibility.

The state department, in addition to performing the usual primary functions of control of water and sewage, collection of morbidity statistics, sanitary control over state institutions and the like, is charged with broad and complete supervisory powers over local organizations. The commissioner can issue orders to local boards and commissioners, require the keeping of standard reports and records, and, with the consent of the public health council, remove commissioners and board members from office, take over the powers of local boards in emergencies, and, through the power to give or withhold the state subsidy, control the general amount and character of the work of local organizations.

HEALTH DISTRICTS

For the purposes of local organization, the state is divided into 168 health districts. Of these eighty are municipal districts and eighty-eight are general districts. Each city, which under the state constitution includes any incorporated place of 5,000 population or over, constitutes a municipal district. The general districts are coextensive with the eighty-eight counties of the state, excluding any cities which are located in them. A general health district is essentially a federation for health purposes of the townships and villages in any county.

Health organization in municipal health districts is entirely within the control of the local authorities. In most cities there is a board of health of five members, appointed by the mayor and confirmed by the council, and a health commissioner, elected by the board, who may or may not be a physician and who may or may not be employed for whole-time service. In certain cities with so called "home-rule" charters, the health commissioner is appointed directly by the mayor or the welfare director or by the city manager. Funds in municipal districts are provided by council as part of the city budget. The only change made in municipal administration by the new laws has been to give the

state department somewhat larger powers of supervision, and to authorize the payment of a state subsidy to local departments complying with the state plan.

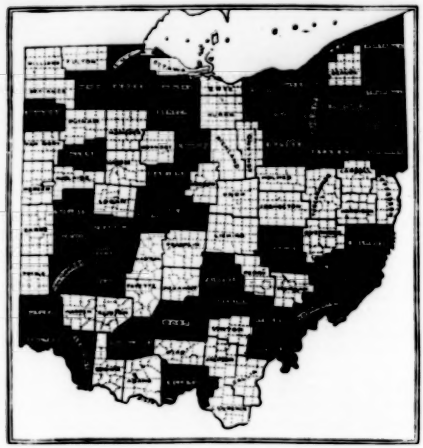

Chart 1.—The counties (shown in black) which have full time health commissioners.

In general districts, there is a board of health of five members, with five-year rotating terms, elected at a meeting of the mayors of villages and the chairmen of township trustees of the district. The board of health elects the health commissioner for whole or part time service, at its discretion. The commissioner must be a physician. Funds for the support of the board are provided on a budget which is prepared by the board of health and which, after review by the county budget commission, is made part of the tax levy and paid into a district health fund.

Both city and general health districts are authorized to employ such nurses, clerks, inspectors and other assistants as are provided for in the budget.

FUNDS AND EXPENDITURES

The state subsidy, limited to $2,000 a year to any district, general or municipal, is payable as a contribution to the salaries of the health commissioner, the nurse and the clerk, on condition that the local board has complied with all laws, orders and regulations of the state department of health. It will be seen, therefore, that the organization of the state department and of the municipal districts is not essentially different from that in effect in other states, and further discussion will be confined to the results so far attained in the general districts, which include the entire rural population of the state.

The new law, passed early in 1919, was radically amended late in December, 1919, and went into practical operation in the early months of 1920. It has, therefore, been in operation less than eighteen months. In that time, eighty-six of the eighty-eight counties of the state have been organized and funds have been provided for the prosecution of the work of the district boards. In two districts, no funds have as yet been made available. The largest budget for a general district is that of Mahoning County, $46,350; the smallest, that of Richland County, $300. The average budget amounts to $8,343.75, and the total for the eighty-six counties is $717,564. This may be compared with an expenditure in the townships and villages, during 1918, of approximately $170,000.

OFFICIALS AND SALARIES

Of the eighty-eight general districts, three are at present without commissioners. In one district funds are available, but no incumbent at present. Two counties are without funds. Of the eighty-five counties, there are forty-one which employ commissioners on part time service. The highest salary paid for part time service is $3,000, and the lowest $800. The average salary of the part time commissioners is $1,842.

Thirty-six counties employ commissioners for full time, and eight employ commissioners who give their entire time to health work, but who are serving a general district and a city district at the same time. The average salary of the whole-time commissioners is $3,518. The highest salary paid is $4,800, and the lowest $2,400.

Fifty-eight general districts employ clerks, and fifty-nine have provided funds for the employment of public health nurses. Eleven counties have provided for more than one nurse and one county has made provision for the employment of nine nurses. Funds are available for the present time to employ a total of eighty-four nurses in the general districts. The difficulty of securing and keeping nurses reduces the number actually employed far below that figure.

Only two districts have provision for the employment of a sanitary policeman, but in thirty-three counties provision is made for the employment of part time deputies, these being usually the old-time township and village health officers, carried as deputies in the new organization.

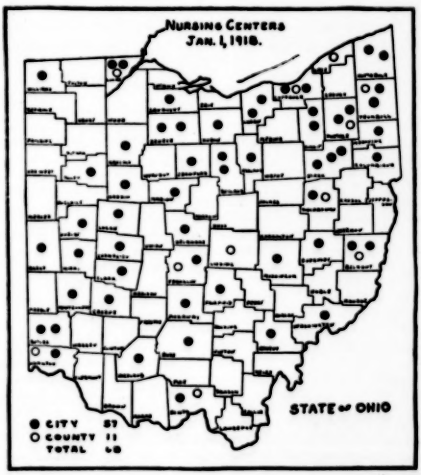

Chart 2.—Nursing centers, Jan. 1, 1918.

The crux of the new organization is, of course, lodged in the character, ability and experience of the new commissioners. The men at present employed are almost without exception local physicians who have given up their practice to enter health work or who do part time work, and practice also. Eighteen are men who took the three months' extension course which was given by the state university and the state department of health prior to the taking effect of the new law. Fifteen of these are whole time officers. The difference between the work of these men, with even the slight training which could be given in an extemporized course of this kind, and that of the men who took up

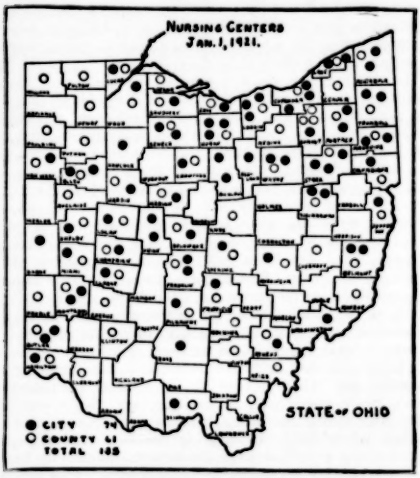

Chart 3.—Nursing centers, Jan. 1, 1921.

the work without training, is very marked. In general, the commissioners have done good work. Some have done excellent work, and all have shown great interest in it. The character of the work being done has steadily improved and is still improving. Many mistakes have been made, but with almost constant supervision by the state department and a little help in critical times, the system has commended itself to the people and to the public officials. At the last general assembly, meeting exactly one year after the new law became effective, only one attempt to change the law by limiting the salaries to be paid in the smaller counties was made, and that was ignominiously defeated.

FEATURES OF THE SYSTEM

The system of finance is the weakest point in the law. It was admittedly a makeshift, designed to evade the very manifest and serious limitations of the Ohio constitution and statutes. As it stands, however, the expenditures for the district board of health stand out as a separate item in the budget of each township and village; and as the work cannot be conducted by townships and villages, some of the more prosperous taxing districts complain of the size of the bill, which represents a service rendered to all parts of the county and not to them especially. It would be far better if the budget of the district board could be levied as a county tax, but this is impossible under the present taxing system of Ohio.

The system as it stands has placed exactly half the counties of the state under whole time health service and has vastly improved the service of the remainder. It has increased the number of cities under full time service from five to fifteen.

EXTENSION OF PUBLIC HEALTH NURSING

The remarkable extension of public health nursing is shown graphically in the accompanying charts. Jan. 1, 1918, there were sixty-eight nursing centers in Ohio, fifty-seven in cities and villages and eleven in rural communities. Jan. 1, 1921, there were 135 nursing centers, seventy-four in cities and villages and sixty-one in rural districts.

Many organizations and individuals have worked in harmony to get the new organization over the stormy and critical days of its beginnings. There is every reason to believe that this period has been passed, and that the organization will continue to grow and develop until every citizen of Ohio will be under the protection of an efficient and well organized health department.

THE USE OF CARBON TETRACHLORID FOR THE REMOVAL OF HOOKWORMS

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Recently I published the results of tests of carbon tetrachlorid on dogs for the removal of parasitic worms, with especial reference to the effect of this drug on hookworms. Thirty dogs were given carbon tetrachlorid, and in all cases except one, a test of toxicity, all feces were carefully examined for worms passed daily up to the time of death, when the animal was examined postmortem and all worms present were collected. The results were very gratifying. In the case of animals given 0.3 c.c. of this drug for every kilogram of live weight, a dose of 3 c.c. for an average-sized dog (10 kg., 22 pounds), all the hookworms originally present were expelled, a result I have never been able to obtain in any series of tests of anthelmintics on hundreds of dogs during the last six years.

Among the drugs previously tested were thymol, chenopodium, chloroform, and combinations of chenopodium and chloroform. The expulsion of all hookworms present was also obtained by the use of a mixture of carbon tetrachlorid and thymol in the proportion of 1 c.c. of carbon tetrachlorid and 0.648 gm. (10 grains) of thymol, and by the use of a mixture of carbon tetrachlorid and oil of chenopodium in the proportion of 3 c.c. of carbon tetrachlorid and 1 c.c. of chenopodium, the dose rate for the mixture being the same as for the carbon tetrachlorid alone. These mixtures, as well as the carbon tetrachlorid alone, were given in hard gelatin capsules, without purgation, to dogs after fasting eighteen hours. The carbon tetrachlorid is also very effective in removing ascarids, being only slightly less effective than chenopodium, which in my experiments has proved practically 100 per cent. effective in removing ascarids from dogs when given in doses of 0.1 c.c. per kilogram of live weight and

immediately preceded or followed by 30 c.c. of castor oil.

The experiments on dogs have been followed by a series of experiments on horses and swine. The results of these experiments are not yet published; but the results indicate that the drug is very effective against the blood-sucking strongyles and moderately effective against ascarids.

SAFETY

While the anthelmintic value of carbon tetrachlorid as indicated by these experiments warrants bringing it to the attention of the medical profession as worthy of attention in connection with the treatment of human beings for hookworm infestation, and possibly for ascarid infestation as well, the question of safety naturally deserves equal consideration. In the earlier article [1] I summarized briefly the available medical literature in regard to carbon tetrachlorid. This drug received considerable attention about half a century ago by Sanson, Simpson, Protheroe Smith, Morel, Laffont and others, for the most part as an anesthetic when administered by inhalation. It appears from their work that the first stage of anesthsia is one of excitation comparable to ether; this is followed by insensibility and finally by collapse if continued. Laffont notes that the pupil of the eye is constantly dilated throughout the first and second stages of anesthesia. Simpson regarded it, on evidence that is not entirely conclusive, as more depressing to the heart than chloroform, and this statement, reiterated subsequently in the dispensatories, is perhaps responsible for the neglect of this drug for half a century. Protheroe Smith found the drug useful in overcoming pain, especially headache, dysmenorrheal distress, tic douloureux and toothache, and of value in mitigating the suffering during labor, as it alleviated the pain without diminishing the uterine contractions. One death from inhalation was reported [2] in THE JOURNAL in 1909, in which carbon tetrachlorid was used as a shampoo on a woman 29 years old, a subject of status lymphaticus, the carbon tetrachlorid having been previously used for this purpose in 30,000 cases with no untoward results other than one or two cases of fainting. It might be noted that carbon tetrachlorid, like chloroform, may develop phosgen (carbonyl chlorid) under certain conditions, and that such an impurity might have been present in this drug as used for shampooing. In the *British Medical Journal*, Sept. 25, 1920, a correspondent [3] reports a case of carbon tetrachlorid poisoning in a girl employed in painting golf ball molds with a paint containing this substance. The symptoms were vomiting, headache and anemia. It is noted by the editor that the frequent inhalation of this substance may ultimately cause a toxic jaundice, which suggests that the drug might act on the liver in a manner similar to the action of chloroform in delayed chloroform poisoning.

So far as dogs are concerned, no macroscopic changes were noted in the liver after the oral administration of carbon tetrachlorid in doses up to 1.5 c.c. per kilogram of live weight, though the acute yellow necrosis due to chloroform is unmistakable in dogs after doses of 0.3 c.c. per kilogram. However, this is a matter which deserves further consideration in connection with the use of this drug as regards its safety. One dog in the series of thirty was given 1 c.c. of carbon tetrachlorid per kilogram of live weight and kept alive for more than eight months, being recently killed in connection with another experiment. The dog appeared well and active at all times during the eight months, and showed no evident lesions postmortem.

DISCOMFORT AND SUBJECTIVE EFFECTS

Another feature to be consdered in connection with campaigns for the eradication of hookworms from man is the matter of discomfort and subjective effects on the patient. Opposition to treatment must be avoided whenever possible, and the production of headache, nausea, burning sensation in the stomach, etc., by such drugs as thymol and chenopodium, frequently makes it difficult to give a second treatment or to bring in new patients after the word has passed around that a first group have been made ill by the treatment.

In order to obtain first-hand information on this point in regard to carbon tetrachlorid, I tested the drug on myself, using the dose found effective in freeing dogs from hookworms, since the dose of most drugs, aside from such as strychnin and morphin, is the same for man as for dogs. The dosage for man and dogs is practically identical for almost all anthelmintics. Three c.c. of carbon tetrachlorid was swallowed in hard capsules, three hours after a light breakfast and after smoking a cigar. The pulse at the time was 90. Forty minutes later, Dr. Walter H. Chapin, a physician of Springfield, Mass., found the pulse to be 78, with apparently a normal pressure. I did the usual day's work at the office during the morning and spent the afternoon making a postmortem examination of some horses. Meals were taken at the usual time and in the usual amounts, and more than the usual amount of exercise was taken. After the treatment, I smoked three cigars and a pipe during the day. Seven minutes after taking the drug, there was an eructation of carbon tetrachlorid, and during the first half hour, there was a sensation of warmth, not sufficient to be called a burning sensation, in the abdomen. This sensation passed away after a short time. There was no evidence of constipation, the drug apparently having a mild laxative effect.

While this one test is not conclusive, it apparently bears out the indications from the experiments on animals, that the drug administered by mouth in therapeutic doses produces no evident symptoms. If it can be taken by a man 40 years old, without any precautions as regards food, smoking and exercise, without producing any symptoms of discomfort and without interfering in any way with the day's work, it would appear to be reasonably safe for the average human being. Anthelmintics in general cannot be taken with equal impunity. Following such drugs as thymol, chenopodium or male fern, it is advisable for the patients to rest, at least, to lie down if feasible, and to go to bed preferably. The list of deaths from thymol, chenopodium or male fern is long enough to warrant further study of any drug that holds out promises of greater safety.

Through the courtesy of Dr. McCoy, director of the Hygienic Laboratory of the U. S. Public Health Service, I have had the opportunty to make some toxicity tests of carbon tetrachlorid on monkeys, in cooperation with Dr. Gleason Lake of the Hygienic Laboratory and Dr. J. E. Shillinger of the Bureau of Animal Industry. Assuming that the indicated dose of the drug for man is the same as that for the dog of average

1. Hall, M. C.: Carbon Tetrachloride for the Removal of Parasitic Worms, Especially Hookworms, J. Agric. Research **21**: 157-175, 1921.
2. A Fatal Shampoo, London Letter, J. A. M. A. **53**: 392 (July 31) 1909.
3. Carbon Tetrachloride Poisoning, Letters, Notes, and Answers, Brit. M. J. **2**: 497 (Sept. 25) 1920.

size, 10 kg. (22 pounds), these animals were given from two to five times that dose, or 6, 9, 12 and 15 c.c. These monkeys weighed from 2.5 to 3.5 kg. (4½ to 7½ pounds). One monkey weighing 2.5 kg. (4½ pounds) received the dose of 12 c.c., or approximately 6 c.c. per kilogram of live weight. Aside from the fact that one or two monkeys ate less than usual for a day or two, no symptoms of injury were noted. After holding the animals for a month, with no evidence of delayed poisoning developing, we released them for other experiments. In the opinion of Dr. McCoy, toxicity tests in monkeys are excellent indications of probable toxic effects of drugs on man, and the apparent safety of carbon tetrachlorid is distinctly indicated by this experiment.

EXPENSE

A final word in regard to this drug is on the score of expense. Carbon tetrachlorid is cheap, much cheaper than chenopodium or thymol, and can be purchased almost anywhere, at any time. It is very easy to make. Finally, the fact that it does not depress unstriated musculature or lessen peristalsis, so far as it has been studied in this respect, would permit of an immense saving by the omission of a purgative in carrying on hookworm campaigns involving millions of people.

It is not my intention to urge the use of this drug clinically on the basis of the evidence at hand. Due precautions are indicated in using any drug in a new manner and for a new purpose. The intent in this article is to call the attention of physicians, and especially of those interested in hookworm work, to the possible usefulness of carbon tetrachlorid for the removal of hookworms and ascarids. It may be said in passing that it is apparently of no value for removing tapeworms, so far as experiments show, and is as unreliable as other anthelmintics for removing whipworms, sometimes removing them and more often leaving them. A chemically pure drug must be used precisely as in the case of chloroform, or any other drug for that matter. In this respect the definite chemical composition of carbon tetrachlorid gives it a definite advantage over oil of chenopodium, which is a mixture of a number of compounds in very variable proportions, which fact may account for some of the bad effects following its use. So far as can be judged at the present time, carbon tetrachlorid is apparently more effective, safer and cheaper than the drugs used at present to remove hookworms.

Hospital Organization and Management.—The most important feature in the organization and management of hospitals is a wisely selected committee or commission on hospitals consisting of persons of broad hospital knowledge. They should be ultimately responsible to the local government, athough not necessarily directly appointed to that body. In fact, it would seem more reasonable that they should hold appointment under a council of hospital workers, organized along similar lines to the medical, legal, dental and other councils. Such a commission would have authority to inspect and examine closely into the methods and working of all hospitals, large and small, public and private, within its territory. It should, above all things, be sympathetic and constructive in its criticism. It would naturally decide on certain standards. These standards would necessarily be graded according to the capacity or special object of each hospital, but should be such as would ensure every patient admitted the best possible treatment. This might involve the transference of certain patients to institutions where more highly specialized equipment would be available.—H. C. Wrinch, *Modern Hospital* **12**:384 (Nov.) 1921.

"PSEUDOTUMORS" OF THE BRAIN

A REMARKABLE COMBINATION OF PSYCHIC, NEUROLOGIC AND AUTONOMIC SYMPTOMS*

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The case which I wish to present to you today belongs to that category which, while exhibiting signs of cerebral tumor, shows no gross lesion on subsequent examination. By some writers these cases have been termed "pseudotumors" of the brain.

Hughlings Jackson referred to such conditions in 1871, and at a necropsy in a series of cases found only a slight congestion of the brain. Oppenheimer mentioned as symptoms in his cases headache, vomiting, pain on percussing the skull, pupillary stasis, aphasia and hemiplegia. Other observers have noted inequality and sluggishness of the pupils, exaggerated reflexes (tendinous and cutaneous), presence of the Babinski sign and, associated with these symptoms, a marked hebetude.

In the case which came under my observation there existed a combination of striking psychic, neurologic and autonomic symptoms.

Among the psychic signs were noted stupor, confusion, hebetude, acute depression and epileptic attacks.

The neurologic symptoms included difficulty of speech, and sometimes tremors of the arms and legs, at other times slow, stiff movements. There was difficulty in walking. Frequently the patient crossed his feet and stumbled, and sometimes there was almost a spastic gait. The reflexes were altered and varied at different examinations; the Babinski sign was now present, now absent.

Among the autonomic signs were diffuse edema of the skin of the head and neck, and dilatation of the vessels with cold and blue extremities similar to those so often seen in dementia praecox. The pupils were sluggish and unequal; the tongue was furred; there was excessive salivation and incontinence of urine and constipation. Some of the autonomic symptoms were almost constant; the neurologic signs varied a little and the psychic disturbances a great deal, from stupor through a slight hebetude to comparative clarity of mind. The fits of depression were temporary.

THE PATIENT'S MENTAL STATE

The patient's own description of his mental state is interesting and instructive. He expressed it as follows: "I cannot control my mind; unpleasant dreams of a dark man disturb me a lot. The Germans did awful things to the Belgians, and when we got German prisoners we made up for it. I did more than bayonet them. My mind wanders; I cannot explain myself. I cannot say I have memories, I cannot say I have not; I am confused. I see the incidents again; it disturbs thinking. I want to tell you." Then he gave me a few details.

At another interview he became very emotional while telling me of the maltreatment of the women and children by the Germans. Then he described the finding of the sergeant of his company in the crucified posi-

* Read before the Section on Nervous and Mental Diseases at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

tion and added, "Very often I see that sergeant." He also said, "That is what I wished to talk to you about." Going into the ward a short time after I found that he had had a strong convulsion, and he has told me that on one occasion after telling his mother about the sergeant incident he went upstairs and had a strong convulsion. He added, "I get a mixed feeling of terror and revenge."

At a later interview he told me of his getting drunk and being condemned to seven days' No. 1 field punishment. This incident has an important relation to many of his symptoms. For instance, many of his convulsive attacks commenced with a feeling of intense cold and shivering. This condition is connected with the fact that he endured his field punishment in Flanders in the month of March during a spell of cold weather. He said "The being bound with cords was a terrible sensation, frightfully cold."

The slow, stiff movements of the limbs were a reproduction of his efforts to find a comfortable position while tied up. In his description of it he said: "When you are tied up, no matter how you tried to shift your position you could not get comfortable; when released I could not walk and had to be carried to the hut. At the first time of being tied up I went unconscious." The movements and the difficulty in walking were always exaggerated during the stuporous attacks.

After a simple explanation of mental mechanisms and also of the possible relation between the punishment and the movements which still persisted had been given to him, he remarked, "Now you have explained it, I can see how it all came about."

The duration of the stuporous attacks increased, and the depression, the convulsions and all the other symptoms continued for several months, and at last he had a very severe attack. The depression was more intense, the stupor deeper, the convulsions more numerous. He lay in bed for days staring at the ceiling and not responding when spoken to; he had to be fed and generally attended to; there was marked incontinence of urine and constipation. His tongue was brown and thickly furred; all the other symptoms were exaggerated.

When he revived after about a fortnight, he was asked as to what he had been thinking about during that period. The reply was, "Bayoneting Belgians who were helping the Germans." Following an inquiry as to whether there had been another subject prominently before him, he became distressed and said, "It is all a mist." Gradually he told me of an incident more serious than any already mentioned. He also said, "This last month I could not keep from thinking of it."

From this time rapid improvement followed. Two months later there is a note to the effect that he had been a little depressed for a day or two but there had been no convulsive attack of any sort for six weeks. He said, "I know that if I gave way to the thoughts I should go back again." Some stiffness of the arms and legs remains, and there is still some difficulty of speech, but there have been no convulsions. The reflexes have become normal, the pupillary reactions are normal, the tongue is clean, the appetite is good, the salivation has ceased, the edema of the skin and the cold extrmeities no longer exist, and the incontinence of urine and constipation have both completely disappeared. He has now for eight months been learning a trade and taking great interest in doing so; there has been no recurrence of the attacks. About a month ago he became a little depressed and had some headache at night which prevented sleep. With this there was a slight anxiety as to what it might mean, but the origins of the attack were soon djscovered and the disturbance ceased. He is now quite comfortable again and the speech and the movements have improved. At the last interview he said he felt better in every way.

CONVULSIVE ATTACKS

The convulsions in this case were numerous, ten or twelve frequently being registered in the twenty-four hours. They were of two types. In one, consciousness was not always lost and, if it were, it would be only for a few seconds. There was a certain amount of rigidity of the body and limbs; the attack ended with a snorting noise. The other type illustrated a real major attack. The eyes were deviated to the right; the rigid phase was long; the twitchings were bilateral; he bit his tongue, sometimes badly, and he passed his water under him.

EXPLANATION OF THE CONDITION

This case was under observation for several months, and during that period many interesting features presented themselves for discussion. Among these we may mention: (1) the difficulty of diagnosis; (2) the extraordinary combination of psychic, neurologic and autonomic symptoms; (3) the two types of convulsive attack; (4) the variation in the reflex responses at different times and even before and after a convulsion; (5) the failure of medicines to produce any noticeable result; (6) the disappearance of all the symptoms after psychic explanation and exploration, and (7) the necessity for continuing the reeducative treatment for a long period.

It is not proposed to discuss all the points mentioned, but rather to offer an explanation of the condition and to suggest the mechanisms underlying it.

In the first place, a definite diagnosis was for a long time impossible. When seen in the earlier stages in consultation with a neurologist, the symptoms pointed to the existence of a tumor in the brain, possibly in the frontal region; but further observation showed that this was improbable. But although the presence of a cerebral tumor was negatived, there can be little doubt that there was some organic disturbance in the nervous system and that this became exaggerated during the stuporous periods.

It will be remembered that Alzheimer in his work on the morbid anatomy in cases of general paralysis of the insane has figured a section of a brain in which one convolution appeared to be much swollen and exhibited a condition of acute edema, but the adjacent convolution showed no sign of such change. And in our own experience cases have occurred in which the symptoms, including convulsive attacks and various focal signs, have suggested the presence of a cerebral tumor but at the postmortem examination no growth was found. The most striking change discovered was an acute edema of the brain.

Conditions of this nature have been produced by Dr. David Orr and myself in a series of experiments on animals. In these experiments a celloidin capsule containing a culture of *Staphylococcus pyogenes-aureus* was placed in the abdominal cavity in a number

of dogs and rabbits. The results indicated an intense vasomotor disturbance of the vessels of the spinal cord. The blood vessels were much dilated; there was present also a hyaline degeneration of the walls of the capillaries and sometimes of their contents, so that a hyaline thrombus had occurred. With these changes were associated a considerable edema of the spinal cord and a primary degeneration of the myelin sheath of the nerve fibers.

Similar alterations were found in the brain when a capsule was placed by the carotid artery. But in the brain a further stage of the lesion existed in the form of a coagulation necrosis of the nerve cells and also of definite softenings in the cortex cerebri and in the cornu ammonis. In none of these experiments were there any evidences of a proliferative inflammatory reaction such as had arisen in the nerve sheaths when a capsule was placed in contact with a peripheral nerve, e. g., the sciatic nerve. Inflammatory changes were present in some of the ganglions of the abdominal cavity, but not in the sheaths of the nerves between the ganglions and the central system or in the central nervous system itself.

These morbid changes were due to altered function of the sympathetic nervous system which was produced by the action of toxins on the ganglions situated in the abdominal cavity. But it is probable that besides the alterations in the functions of the sympathetic nervous system there were some changes in the activity of those small but important organs, the endocrine glands.

In the case under consideration in this paper there were many evidences of altered function in both the autonomic and sympathetic divisions of the nervous systems and in the endocrine glands, viz., the edema of the skin and the cold blue extremities, the intense salivation, the unequal and sluggish pupils, the incontinence of urine and the constipation.

It is now known that while the functions of the endocrine glands are largely under the control of the central nervous system, its activity, on the other hand, is much influenced by their secretions. It is possible, therefore, that the combined disturbances of the sympathetic and autonomic systems and of the endocrine glands may have led to a slight, but recoverable primary degeneration of the nervous structures and to an alteration in their sensitivity and reactivity.

But all the symptoms of this case, taken together, indicate an alteration in the functional activity of the whole organism. In all mental as well as physical processes the organism works as a whole. Disturbances of the sympathetic and autonomic systems, of the endocrine glands or of the other organs of the body can affect the functions of the mental mechanisms, and also the organs of the body can be influenced by changes which accompany mental states. It is possible, therefore, that the physical changes, suggested as having occurred in the central nervous system, may be the result of psychic activities and that, while those changes may have had something to do with the persistence of the symptoms, they are really secondary effects and not original causes, and by themselves they provide no explanation for the illness as a whole.

During the progress of this case it was of interest that no obvious alteration of symptoms was produced by drugs, such as atropin and pilocarpin, which are known to influence the sympathetic and autonomic systems, or by the administration of thyroid extract or bromids. No improvement was observable until a series of disturbing incidents in the patient's past life had been unraveled by psychic investigations and the mechanisms of mental processes had been explained to the patient. By means of the explanation he was enabled to understand not only that all stimuli which cross the threshold of consciousness give rise to an intellectual appreciation of what has happened, but also that each is accompanied by its own specific emotional reaction. Further, that when the memory of a stimulus, e. g., one of his experiences in Flanders, is revived, an emotional reaction similar to that felt at the time of the original incident is reproduced. When, therefore, after prolonged and fruitful investigation and simple explanation he was able to comprehend what had been said and to recognize the significance of the incidents which had happened in Flanders, he was in a position to say, "Now you have explained it, I can see how it all came about."

We are all familiar with the results which follow varying degrees of emotional disturbance, results ranging from the blush with slight mental confusion to the condition of unconsciousness. The intimate connection between emotional stress and alterations of the circulatory, respiratory, digestive, genito-urinary, motor and nervous systems is demonstrated by our everyday experience. It is also frequently recognized by our patients. The statement of one man illustrates this extremely well. Without the subject being suggested in any way he said, "I know that if I get excited I shall have those swellings come on me." Those swellings were patches of edema, local erythema, which appeared under his left eye, on his chin, on his left shoulder and on two or three areas on his chest wall. They developed time after time while the patient was in the hospital, and gradually faded away again in the course of a few hours so that the association between excitement and swelling was fully appreciated by him.

This case is of the utmost significance because it demonstrates that small, discrete patches of disturbance can occur in the sympathetic system and give rise to limited, local symptoms.

ASSOCIATION BETWEEN EXPERIENCE AND LATER DISTURBED FUNCTION

The intimate association existing between a past experience and a later disturbed function, mental or physical, is clearly evidenced in the patient, the subject of this paper:

1. The first attack of unconsciousness occurred when he was tied to the wheel while undergoing the No. 1 field punishment, and, as he has informed us, many of the subsequent attacks were ushered in by a feeling of intense shivering and cold similar to that experienced at that time.

2. His peculiar movements of the trunk, arms and legs suggested movements which might naturally be made in attempting to find relief from the great strain while tied up.

3. At the end of the period on the wheel he had great difficulty in walking, and sometimes could not walk at all but required to be carried to the guard-room.

4. It will be remembered that on his being asked what had occupied his mind during the last period of stupor he replied, "Bayoneting Belgians who were helping the Germans," and that subsequently it was discovered that the most serious of all the incidents had also exerted an absorbing influence on him.

That the incidents discovered during the process of exploration were very terrible to him and aroused intense emotional reactions there can be no doubt. This intensity was increased by repeated reflection on them together with the repeated emotional outbursts associated with them. These repetitions, spread over a considerable time, led to the development of a series of conditioned reflexes so that special mechanisms were facilitated by the frequently recurring and adequate stimuli, and other mechanisms were inhibited. But a conditioned reflex is a temporarily acquired reaction and disappears when the requisite stimulus is withheld or when some other stimulus is applied which can inhibit the reflex already established. The remark of the patient, "I know that if I gave way to the thoughts I should go back again," means possibly that by applying other inhibitory stimuli in the course of treatment the former reflex failed to appear, although the original stimuli, the thoughts, recurred from time to time.

But while the original stimuli, thoughts of past incidents, were free to act, they seriously disturbed the patient's mental mechanisms. The functions of perceiving, thinking, feeling, judging and acting, the power of attention and of assessing values were so interfered with that he developed an acute mental illness. This was characterized by severe epileptic attacks, by depression, by confusion and repeated periods of stupor, and by intense emotional disturbances.

The neurologic and autonomic symptoms were probably secondary results produced partly as reproductions of past experiences and partly under the influence of altered organic functions. These in turn depended for their origin on alterations which may be considered as physical manifestations accompanying emotional reactions. And as psychic experiences were the cause of the disabilities mentioned in this paper, so these disabilities were recovered from under the influence of psychic treatment.

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ABSTRACT OF DISCUSSION

DR. MORTON PRINCE, Boston: As I listened to Dr. Rows' keen analysis I could not help thinking how far we have progressed in scientific thought since the day when the subconscious was first brought to light, as far back as 1886, by Pierre Janet in France. I was particularly interested in the fact that Dr. Rows, in the explanation of certain of his phenomena, made use of the autonomic system, for our knowledge of which we are so much indebted to Dr. Cannon. We are now able to understand the physical source of many psychoneurotic phenomena of which the pathology was previously obscure. Regarding, however, one of the phenomena manifested in Dr. Rows' case, perhaps he will permit me to present a little different interpretation. It is quite possible that the stupor may have been due to edema of the brain as occurred, as I understood him, in other parts of the body. I would offer another interpretation. It is quite possible, if not probable, that the stupor was really a defense reaction in the sense that it was due to an inhibition of consciousness brought about by conflict. I have produced the same phenomenon experimentally. For instance, a patient entertained certain ideas which were so repugnant to her that she was unable to discuss them. When she attempted to do so at my solicitation she was taken with spasm of the lips, tongue and throat, making it impossible to speak; then, as she continued the attempt, her thoughts became confused, and, as I still insisted, she finally went into a condition of apparent unconsciousness, a condition similar to stupor. It was very simple to demonstrate that this condition of apparent unconsciousness was produced by the conflict, a determination of the idea to prevent all disclosures by means of the stuporous condition. I could reproduce the "unconscious" state every time I repeated the experiment. As to the question of treatment, I was very much interested in the point of view presented, which I think is entirely correct. I believe the basis of all therapeutic measures, whether that of psychanalysis or mind cure or Christian science or reeducation or other forms of mental therapeutics, is what I have called "complex building," the building of new points of view, new sentiments, new meanings of ideas and attitudes of mind. Reeducate the person, give him a new attitude of mind and new points of view toward the causal factor, and you will dispel the symptoms.

EFFECT OF UNDERNOURISHMENT ON MAMMALIAN OVARY AND THE SEXUAL CYCLE*

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The effect of undernourishment on various bodily functions is, at the present time, a subject so prominent in medical literature that it might be useful if a short summary were presented of the investigations bearing on these problems, which we have published in the last ten years in various periodicals, and particularly also of the investigations which have been published in biologic journals, not always accessible to writers on medical subjects.

1. In the course of experiments in which we analyzed the effect of the internal secretion of corpus luteum on ovulation in the guinea-pig,[1] we found that a complete excision of the corpora lutea led to a notable acceleration of ovulation, which took place soon after some of the follicles had reached the stage of maturation.[2] The process of follicular maturation was not thereby accelerated, but merely ovulation. These results made it possible to arrive at a theory as to the sexual cycle which was well founded on facts, while previously mere hypotheses had existed, and even those, as we demonstrated in the case of Beard's opinion, had been only in part correct. In experiments, however, in which, instead of excising the corpora lutea, we burnt them out, we found that, notwithstanding their complete elimination, ovulation was not accelerated. This was due to the fact that the process of burning caused an injury of the remaining ovarian tissue and particularly of the follicles. As a result of this injury, young follicles remained alive and even began to develop, but their vitality was markedly diminished. They never matured and usually became atretic before they reached medium size. Thus a condition intermediate between active life and tissue death or latent life had been established, which in general we designated as tissue shock. In particular in the case of the ovaries we designated such organs, characterized by the presence of only small and small to medium size follicles, at a period of the sexual cycle at which there should have been present large ones,[3] as hypotypical ovaries.[4] In these, of course, ovulation can not take place.

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1. In the past year we have again taken up our investigations on the effect of internal secretion on ovulation, and we have extended our previous work in various directions.

2. Loeb, Leo: Deutsch. med. Wchnschr., 1911; Virchows Arch. f. path. Anat. **204**: 218, 1911.

3. Ovaries of the rat and rabbit and probably of other animals differ from those of the guinea-pig; in the latter an almost general atresia of all but the smallest follicles is characteristic of ovulation. In the rat and rabbit such a general atresia does not occur.

4. Loeb, Leo: Zentralbl. f. Physiol. **25**, No. 9, 1911; Virchows Arch. f. path. Anat. **206**: 278, 1911.

2. Soon afterward we found that a hypotypical condition of the ovaries may occur spontaneously in certain guinea-pigs; we observed it, for instance, in animals which had remained sterile for a considerable period, although they were at an age when normally ovulation should occur regularly. On examination of the ovaries in serial sections, we found in such animals a hypotypical condition of the ovaries, which was absent in normal controls. From these and other results, we concluded that a hypotypical condition of the ovaries is one of the causes of sterility in the female sex.

3. The latter observations suggested that there must be still another rather common cause underlying the hypotypia of the ovaries, and it occurred to us that unfavorable nutritional conditions, due either to outside factors or to a pathologic state within the animal, might be responsible for it. Accordingly we carried out, five or six years ago, a considerable number of experiments in which we exposed guinea-pigs to pronounced undernourishment.[5] They received the usual kind of food (mainly grain and fresh vegetables or grass), but in a quantity so much reduced that they lost approximately from 20 to 30 per cent. of their initial weight, usually in the course of from two to three weeks, or in a shorter period. In all of these animals definite changes were found. In none did the development of follicles proceed so far that mature follicles developed; but in a considerable number the changes went much further. While the follicles began to develop and could reach from small to medium size, and in some cases the development proceeded even as far as to the production of medium follicles, the development ceased prematurely, and the follicles began to retrogress without reaching medium or a large size.

4. The intensity of the ovarian changes depended not only on the degree of underfeeding, but also on the time which had elapsed between the onset of the experiment and the time when the required loss of weight had occurred. At least six or seven days were required for the establishment of these pathologic changes in the ovaries. Furthermore, the weight and age of the animals were of importance. Younger animals were much more readily affected than older ones. The change could, however, be produced in older animals. This is in accordance with the greater susceptibility of younger animals to reduction in the quantity of food, which, again, is the result of the relatively greater surface and, therefore, the greater metabolism of these animals in proportion to their volume or weight. Possibly the needs due to the process of growth are a contributory factor.

5. In the living follicles of such hypotypical ovaries, mitoses still occur in the granulosa cells and, as Dr. Walsh found in our laboratory, the number of such mitoses is almost normal, if figured out on the basis of the number of preserved granulosa cells.[6] These follicles retrogress, because the degeneration of isolated granulosa cells sets in at an early stage, and this degeneration is so pronounced that the loss of cells far exceeds their new formation. Thus a condition develops analogous to that we had previously found in the case of retrogressing tumors.

6. From these observations it follows that the underfeeding as well as other injurious agencies affect primarily the epithelial elements (the granulosa) of the follicles and, furthermore, that the smallest follicles prove to be the most resistant. The effect of underfeeding is, however, not entirely limited to the epithelial elements; to a minor degree the connective tissue is also affected. Thus we often notice that, instead of growing into the cavity of the follicles deprived of their granulosa, the connective tissue of the theca interna remains inactive, and in consequence of the inactivity a cystlike body results. In one very marked case we could show that even the perifollicular connective tissue may suffer under those conditions, and that, owing to the intra-ovarian pressure, smaller follicles may be pressed into large ones, or follicles of equal size may be joined together. Thus follicles with two or more eggs result.[7] This is one mode of origin of such plurioval follicles. However, in all cases the granulosa is affected primarily by the underfeeding, and the connective tissue seems to be much more resistant to the lack of foodstuffs and other injurious agencies.

7. In the guinea-pig, during the process of atresia, the first, usually irregular, segmentations of the ova occur not infrequently; these changes are not prevented by the underfeeding, and this observation raises an interesting question as to the significance of the ovum in the hypotypical condition of the ovary.

8. In order to understand the causes responsible for the cessation of growth and atresia of follicles, it is necessary to analyze the factors which normally call forth the follicular growth. In the course of former studies on the cyclic changes in the ovary of the guinea-pig, we observed that the majority of the follicular mitoses were found in the granulosa cells directly surrounding the ovum. This suggested to us the possibility that from the eggs might emanate a stimulus of a chemical nature which calls forth the proliferation of the granulosa cells, and thus the growth of the follicles and, ultimately, of the whole ovary. This conception was substantiated through the quantitative measurements of the ovarian follicles which were subsequently carried out in our laboratory by Dr. L. S. N. Walsh. Dr. Walsh determined the growth curves of the follicles as related to their size and the seat of the greatest mitotic activity.[8] The results obtained can be understood if we assume that the egg is responsible for the growth of the follicles and, ultimately, of the whole ovary.

If, then, the ovum is responsible for the growth of the follicles, might it not be that injury of the ovum as a result of the application of a moderate degree of heat or of marked undernourishment might prevent the further growth of the granulosa and, correspondingly, of the whole ovary? This is possible, and perhaps the recent observations of Reynolds and Macomber[8] and previous observations of some Russian writers might be interpreted as supporting such a conclusion. It is, however, probable that, even if this factor should be active, there is in addition a direct injurious influence of heating or undernourishment on the granulosa itself. The continued proliferation of the granulosa cells in animals suffering from these pathologic effects suggests such an interpretation; it indicates the activity of the ovum. The separation of these two factors, however, needs further study, and we intend to continue our investigations.

10. If a marked loss of weight is produced through means other than underfeeding, would the effect on

5. Loeb, Leo.: Science **45**: 591, 1917; Biol. Bull. **33**: 92, 1917.
6. Walsh, L. S. N.: J. Exper. M. **26**: 245 (Aug.) 1917.
7. Loeb, Leo: Biol. Bull. **33**: 187, 1917.
8. Reynolds, Edward, and Macomber, Donald: Defective Diet as a Cause of Sterility, J. A. M. A. **77**: 169 (July 16) 1921.

the ovaries be similar to that produced through direct underfeeding? The results of experiments carried on in our laboratory by Mr. W. B. Hoover indicate that a loss of weight called forth through thyroid feeding, combined with a diet which in itself almost permitted the guinea-pig to maintain its weight, may likewise produce a hypotypical condition of the ovary. Mr. Hoover will report on these experiments more fully at a later date.[9]

11. It is clear that a hypotypical condition of the ovaries is incompatible with ovulation and the normal course of the sexual cycle. The uterus in such cases usually is found to be thin and inactive. The structures corresponding to the so-called interstitial gland in the ovaries of other species are, however, well developed in these animals, owing to the large number of atretic follicles in such guinea-pigs and to the diminution in intra-ovarian pressure, which permits the elements of the theca interna to expand.

12. Our experiments illustrate very well the primary significance of growth stimuli, as exemplified in the effect of substances emanating from the ovum on the growth of the ovarian follicles and of the ovary as a whole. There is added to this, as a secondary requirement, a supply of foodstuffs. But the supply of the latter cannot initiate growth nor can its lack prevent it, at least temporarily.

THE SO-CALLED PRESYSTOLIC MURMUR *

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In a recent paper,[1] I pointed out that the murmur heard over the cardiac apex, and generally termed presystolic, is really early systolic in time and caused by ventricular systole. Since then, as has been aptly said,[2] "A great deal of water has run under the bridge," and we now have additional facts which tend to confirm and amplify the earlier assertions.

The detection of a presystolic murmur is commonly held to be evidence pointing to stenosis of the mitral orifice due to actual change in its valve curtains; and this condition is a certain indication of rheumatic heart disease. The latter, with the damage of the myocardium which we now know to be associated with this type of valve lesion, is, from the standpoint of prognosis and treatment, one of the most important of heart diseases. It makes for clear thinking that our interpretation of the ausculatory phenomena of the heart should be accurate. Also I have seen instances in which an incorrect understanding of this murmur has led to an erroneous diagnosis, such as rheumatic mitral stenosis in a case of chronic vascular hypertension.

The murmur is usually described as crescendo in type, often loud and rough in quality, and ending in a sharp first heart sound or frequently being merged into a systolic murmur, which may mask the first heart sound at the apex. It has long been attributed to a stream of blood passing through the mitral valve in presystole as a direct result of the contraction of the auricle; and Mackenzie is credited with having pointed out the disappearance of the presystolic murmur with the onset of auricular fibrillation (in which the normal auricular contraction is in abeyance).

PRODUCTION OF THE CRESCENDO MURMUR

There are a few points which should be raised against the acceptance of this crescendo murmur as truly presystolic and, therefore, due to auricular systole:

1. The intensity and roughness are often so marked as to be inconsistent with the force of auricular systole, whereas they are in agreement with that of ventricular origin.

2. The murmur occurs before the systolic sound but not before the beginning of contraction (or systole).[3]

3. The absence of a pause between this so-called presystolic murmur and that of true systole. If the former were due to auricular systole, the current must reverse before the murmur of regurgitation through the mitral valve can be produced. It is inconceivable that this can occur without the presence of an appreciable pause.

4. The crescendo murmur under discussion may remain in the presence of auricular fibrillation. I have observed this in some instances in which the clinical diagnosis of auricular fibrillation was confirmed by the electrocardiograms.

The foregoing must not give the impression that it is urged that this crescendo murmur is unaffected by the change from the normal rhythm to that of fibrillation. On the contrary, the murmur generally lessens or disappears. Probable reasons for this are the great variations in the amount of the blood contained in the ventricle at the onset of its systole and the resulting variation in the level of pressure and output achieved, and consequently in the sounds and murmurs produced. In addition, the lowering of the tone of the myocardium, which can be assumed in many hearts affected by fibrillation, lessens the cooperation of the muscle in the closure of the mitral orifice. The latter conditions tend to a freer mitral insufficiency and not to the early regurgitation with its crescendo murmur.

5. There is a true presystolic murmur. It is low-pitched, often faint, and usually noted [4] merely as an accentuation of a murmur beginning earlier in diastole. It is separated from the succeeding sound or murmur. In quality, time and duration, it is consistent with auricular systole and lacks other reasonable explanation. It may exist with the crescendo, so-called presystolic, murmur. In auricular fibrillation, the true presystolic murmur is absent.

To deny that the "crescendo murmur ending in a sharp first sound, etc.," is the result directly or indirectly of auricular contraction is contrary to what may be termed the orthodox explanation of its production. But I fully appreciate that the earlier men who held the view that the murmur was caused by auricular

9. In this connection we may briefly refer to some other observations which Mr. Hoover made in the course of these experiments. If a guinea-pig is markedly underfed for a certain period of time, a limited amount of edematous fluid is usually found in the peritoneal cavity at the time of death. If, on the other hand, a similar loss of weight is induced through thyroid feeding, the peritoneal cavity is found in a dry condition in the large majority of cases. The thyroid counteracts the tendency toward edema in certain cases, a conclusion which agrees with the recent investigations of Eppinger, which owing to the war, became accessible to us only after our observations had been made.

* From the Heart Clinic of the Boston Dispensary and the Heart Service of the Boston City Hospital.

1. Reid, W. D.: The First Heart Sound and the Presystolic Murmur, J. A. M. A. **76**: 432 (Feb. 12) 1921.

2. Henderson, Yandell; Haggard, H. W., and Coburn, R. C.: The Acapnia Theory, Now, J. A. M. A. **77**: 424 (Aug. 6) 1921.

3. The data on which these two assertions are based, I believe, have been sufficiently presented in a previous paper (Footnote 1) and will not be repeated here.

4. Reid, W. D., and White, P. D.: M. Clin. N. Am. **4**: 383 (Sept.) 1920.

V. 7
1921

systole formed this opinion before the recent advances in our knowledge of the physiology of the auricles and of the nature and time relationships of the heart sounds, previously discussed.[1] The onus of believing differently from the majority of the profession is somewhat lessened by my discovery, recently, of a number of articles which tend to support my contention. A brief outline of these is of interest.

Although Fauvel,[5] in 1843, clearly described the presystolic murmur and urged that it was a most probable sign [6] of mitral stenosis, the credit of emphasizing its importance as evidence of mitral stenosis is generally conceded to Gairdner.[7] The interpretation of this eminent Scotchman that the murmur was "auricular-systolic" and indicated mitral stenosis was generally accepted and apparently is yet the opinion of the majority.

Not all of the profession, however, have been content with this orthodox reasoning. Omerod,[8] in 1864, held that the auricular contraction was too weak and brief to cause so loud a sound, which was really produced by ventricular systole. Again, in 1872, Barclay [9] resumed the discussion and came to similar conclusions, at one place stating that it is "scarcely possible that one of the loudest and roughest murmurs ever heard in cardiac disease should be produced by the contraction of the auricle."

In his clearly written paper, in 1887, Dickinson [10] urged that if the presystolic murmur were due to auricular systole it should be separated by an appreciable interval from the true systolic murmurs since the current of blood causing the murmurs must reverse its direction of flow. Brockbank,[11] too, in 1909, was convinced that it is early systolic and not presystolic. In addition, he gives a critical discussion of the views of Sir James Mackenzie on the subject. He states that the latter admits that a slight regurgitation through the mitral orifice at the beginning of ventricular systole may produce the brief crescendo murmur. Brockbank points out that Mackenzie has found crescendo murmurs in cases in which the phlebograms showed no wave due to auricular contraction at the normal time. Brockbank also quotes Thomas Lewis as having reported the disappearance of the crescendo murmur with the persistence of a wave in the venous pulse which he (Lewis) attributed to auricular contraction. And further, in 1911, Hart [12] records the persistence of the crescendo murmur in four cases in which the clinical diagnosis of fibrillation of the auricles was confirmed by graphic methods.

In view of the observations of the various writers quoted above, and more particularly of the persistence of the crescendo murmur in some cases of auricular fibrillation, i. e., when the normal auricular contraction is in abeyance, reported by Hart and which I [13] observed independently, it no longer seems tenable to attribute this crescendo murmur, ending in a sharp first sound or merging into a systolic murmur, to the effect of auricular systole. That it is due to a stream of blood regurgitating from the left ventricle to the left auricle is the contention of the several authors (Omerod, Barclay, Dickinson, Brockbank and Hart) whose papers have been referred to, and some of the more technical details in support of this conception I have presented in an earlier paper.[1]

That the crescendo murmur herein discussed is pathognomonic of mitral stenosis was the belief of the earlier writers, as well as some of those who refused to accept its auricular origin (Barclay, Dickinson). More recent experience, however, has shown that there are exceptions. Thus, Phear,[14] in an analysis of forty-six necropsies in which no stenotic change of the mitral valve was demonstrated, although the presence of a presystolic murmur had been recorded, found that in seventeen there was aortic regurgitation; in twenty, adherent pericardium, and in nine, dilatation of the left ventricle. In addition, Sewall [15] has emphasized that in the structurally normal heart the first sound frequently begins with a crescendo tone, simulating closely the faint and brief presystolic murmur or acute accent initiating the first sound in certain stages of mitral stenosis. It is the occurrence of these exceptions and the possibility of errors in diagnosis, as mentioned earlier in this paper, which make it necessary to judge accurately as to the nature of the murmur.

From the foregoing data, it is obvious that there are two murmurs and that they have been confused. One is the true presystolic murmur further described above under the fifth heading; the other is that to which the expression presystolic murmur is intended to refer. It would seem clear that the latter, the so-called presystolic murmur, is a crescendo murmur occurring during the early part of ventricular systole. That it is so frequently present in mitral stenosis is to be expected when it is remembered that the rheumatic infection producing stenosis of the mitral orifice commonly causes a thickening and shortening of the chordae tendineae, which will readily delay or prevent the full closure of the valve.[16] The crescendo quality of the murmur seems most probably due to the rising intraventricular pressure and to a lesser extent to the increasing degree of closure of the mitral orifice.

CONCLUSIONS

1. The crescendo murmur ending in a sharp first sound or merging into a systolic murmur is wrongly designated as presystolic, since in reality it is early systolic in time.

2. This so-called presystolic murmur is due to a regurgitant stream of blood, impelled through the mitral valve by ventricular systole.

3. The writings of a number of previous observers support this interpretation.

4. Against the conception that it is due to the contraction of the auricle, there are, in addition to the data presented in an earlier paper,[1] its quality, time, absence of a pause between it and the succeeding sound or murmur, its persistence in some cases of auricular fibrillation, and the occurrence at times of another murmur in true presystole.

5. While the murmur is frequently observed in hearts whose mitral valve is stenosed, it may be present in conditions in which the mitral orifice is not narrowed.

5. Fauvel, M.: Arch. gén. de méd. **1**: 1, 1843.
6. "Le signe stethoscopique le plus probable d'un retrecissement de l'orifice auriculo-ventriculaire gauche."
7. Gairdner, W. T.: Clinical Medicine, Edinburgh, 1862, p. 574.
8. Omerod, E. L.: Med. Times & Gaz. **2**: 154, 1864.
9. Barclay, A. W.: Lancet **1**: 283, 1872.
10. Dickinson, W. H.: Lancet **2**: 650, 1887.
11. Brockbank, E. M. Quart. J. Med. **3**: 345, 1909-1910.
12. Hart, T. S.: Med. Rec. **80**: 2, 1911.
13. The writer entertains no doubt that the same phenomenon has been observed by other electrocardiographers.
14. Phear, A. G.: Lancet **2**: 716, 1895.
15. Sewall, H.: Am. J. M. Sc. **98**: 10, 1909.
16. The mechanism of the closure of the mitral valve will be more readily appreciated by those interested if they consult the paper on this subject by Henderson, Yandell, and Johnson, F. E.: Heart **4**: 69, 1912-1913.

6. A misunderstanding of the true nature of the so-called presystolic murmur has resulted in errors in cardiac diagnosis.

7. There are two distinct murmurs, the so-called presystolic and a true presystolic. The latter is less common and more difficult to detect. It would appear that the two murmurs have been confused.

21 Bay State Road.

A METHOD FOR THE DETERMINATION OF DEATH BY DROWNING*

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The medicolegal expert is often confronted with the problem of determining whether a person whose body is found in water met death by drowning or by some other cause. Although many tests and pathologic signs have been suggested, there is at present no specific or reliable one. The following conditions have been suggested by various observers as aids in determining whether death was the result of drowning.

SURFACE SIGNS

1. Excessive coldness of corpse (of no value).
2. Extreme whiteness (of no value).
3. When the body is brought into contact with the air, it changes from brown to dark green more quickly on the breast than on the abdomen. The reverse occurs in all nondrowning cases (this sign is of no value).
4. Wrinkling of the skin (of no value because this may happen to a body thrown into the water after death).
5. Goose skin (this is not specific, because it is found in other conditions; it may also form after death).
6. Contraction of penis, scrotum and breast (these may contract if the body is thrown into the water after death).
7. Foam in mouth and nose (this is found very often, although it is not a constant sign; it may, however, occur from other causes, as in pulmonary edema).
8. Ecchymoses in the conjunctivae and in the skin of the face (a rare finding).

INTERIOR SIGNS

9. Dark and fluid blood (this is found in many other conditions).
10. Dilated thorax and distended abdomen (of no value).
11. Epiglottis relaxed (this is found in many other conditions).
12. Bladder empty (of no value).
13. Congestion of all organs (of no value; characteristic of all forms of asphyxia).
14. Excessive oozing of blood when skull cap is removed (of little value; characteristic of asphyxia in general).
15. Drowning fluid in stomach (Liman proved that water can get into the stomach after death, but in a small amount).
16. Large, pale red ecchymoses on surface of lungs (this is not a constant finding).
17. Drowning fluid in duodenum, jejunum, and even in the ileum (Kolisko). This finding is more specific than water in the stomach. There are numerous drowning cases, however, in which the water does not get into these parts of the alimentary tract. The presence of fluid in the ileum is typical of drowning because it cannot get there after death except by enormous pressure. However, it must not be overlooked that the absence of drowning fluid in the ileum does not mean that the case is not one of drowning, because in many cases the water does not reach the ileum.
18. The presence of fluid in the middle ear is significant only if the ear drum is intact; it has, however, been proved that this may happen after death.
19. Drowning fluid and foam in the trachea and lungs.[1] The fluid does not seem to get into the lungs until the third stage; then it goes to the bronchi and alveoli. The amount depends on the length of the terminal inspirations (there are exceptional cases in which there is no third stage). It is important in this connection to bear in mind the presence of foamy fluid in the lungs in cases of pulmonary edema.
20. Balloon-like lungs, increased in volume (this is not a constant finding).
21. Pieces of lungs sinking when thrown into water (of no value).
22. Inflation of lungs with colored liquids or gases to determine whether they will penetrate throughout (nondrowned lungs) or only partially (drowned lungs). This contention has been proved erroneous.
23. The presence of foreign bodies (present in the water) in the alveoli (Lesser). This is not a constant finding in drowning cases.

It is evident that most of the conditions named above are misleading and useless. Several of these conditions, taken collectively, will aid greatly in deciding the cause of death, but they are by no means positively specific. The following three are of the most value:

1. Foamy fluid in the trachea, bronchioles and lung cells.
2. Microscopic finding of foreign bodies (from the water) in the bronchioles and alveoli.
3. Water in the stomach, duodenum, jejunum and ileum.

Not finding specific and reliable means of diagnosing this condition, the workers in this field then turned their attention to chemical and physical methods, based on the well known physiologic fact that blood from the lungs passes to the left heart and then through the organism, whereupon it goes to the right heart, and then back to the lungs. Water entering the lungs will quickly reach the left heart and dilute the blood therein, while the blood of the right heart remains relatively undiluted. L. Wachholz has proved experimentally, both in man and in animals, that no water can get into the left heart if the individual is thrown into the water after death. The following methods have been advocated to determine this dilution of the blood in the left heart:

1. The estimation of the total solids in the blood of the left and right heart chambers (Brouardel and Loye).
2. The cell count (Brouardel and Vibert).
3. The hemoglobin content (Paltauf).
4. The freezing point determination (Carrara).
5. The specific gravity (Carrara).
6. The ash (Carrara).
7. The iron content (Carrara).
8. The conductivity of the blood (Carrara).

Freudenberg, Paltauf, Strassman, Carrara and others have shown that all the foregoing methods fail in many cases. Autolysis, hydrolysis, diffusion, hemolysis and putrefaction will alter the composition of the blood so as to offset the true values present at the time of death. The longer the interval between death and the analysis, the greater is the change in the composition of the blood.

I have made a comparative study of these methods and have also found great discrepancies, due to

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1. The time interval between submersion and death in cases of drowning may be divided into three stages: First, the period in which respiration is held back. This lasts only a few seconds and is instinctive; it may be reflex and may result in prolonged respiratory suspension. Second, the stage of dyspnea, which consists in short but deep inspiration, quickly followed by expiration. This is followed by convulsive expiration. Third, the stage of asphyxiation. Here we have unconsciousness and lost reflexes and deep inhalation at long intervals.

V. 7 1921

postmortem changes. The solids, cell count, hemoglobin, freezing point, specific gravity and conductivity of the blood were all materially altered. Furthermore, the changes occurring in the right chamber and in the left chamber did not run parallel. Therefore, one cannot use even the relative values in the two chambers. The value of the ash is not affected by postmortem changes, and it could be used were it not for the difficulty in obtaining the true values; this difficulty is due to the volatility, at quite low temperature, of the sodium chlorid during the ashing. The determination of the iron content in the blood of the two chambers is as good as any so far suggested.

An accurately measured or weighed amount of blood is dried and ashed; the ash is moistened with a few drops of nitric acid and reignited, this process serving to oxidize any reduced iron to the ferric condition. The residue is dissolved in dilute warm hydrochloric acid and filtered quantitatively. To the filtrate, a solution of potassium ferrocyanid is added, and the colors of Prussian blue thus obtained are compared in a colorimeter. The iron content is not changed by postmortem decomposition, and none is lost during the ashing. It is easily brought into solution, and the development of the Prussian blue color is quantitative. This appears to be a good method for defecting dilution in the blood of the left heart, but inconsistent results were often obtained by this method, so that finally I had to discard it entirely.

As all the organic constituents are affected by postmortem changes, it is obvious that any method involving them will be erroneous, especially in cases in which autolysis and putrefaction have set in. Methods in which this change in the organic material will influence the physical condition (freezing point, conductivity) must also be discarded; so there remain only the inorganic constituents on which a method may be developed. These are not affected by postmortem changes; the only possibility of error may be that of unequal diffusion of water from either side of the heart. It occurred to me that a study of the chlorid content would be interesting, as sea water contains a large amount of chlorid, and fresh water a negligible amount. Furthermore, the newly developed microchemical methods for chlorids lend themselves admirably to this study; they are accurate and require only a small amount of blood.

FINDINGS IN FORTY-ONE CASES

Case	Where Found	Diagnosis	Mg. NaCl in Right Heart	Mg. NaCl in Left Heart	Difference, Mg.	Interpretation
1	Hospital	Nephritis	495	497	+ 2	Not drowned
2	Hospital	Cerebral hemorrhage	501	500	− 1	Not drowned
3	Hospital	Pneumonia	492	492	0	Not drowned
4	Med. exam. case	Shooting	492	494	+ 2	Not drowned
5	Med. exam. case	Alcoholism	451	447	− 4	Not drowned
6	Med. exam. case	Narcotic poisoning	473	470	− 3	Not drowned
7	Hospital	Nephritis	556	555	− 1	Not drowned
8	Med. exam.	Alcoholism	510	506	− 4	Not drowned
9	Med. exam.	Cyanid poisoning	489	491	+ 2	Not drowned
10	Med. exam.	Cyanid poisoning	480	475	− 5	Not drowned
11	Hospital	Nephritis	701	698	− 3	Not drowned
12	Hospital	Cardiac disease	498	493	− 5	Not drowned
13	Med. exam.	Shooting	492	482	0	Not drowned
14	Hospital	Cardiac disease	495	490	− 5	Not drowned
15	Hospital	Nephritis	525	521	− 4	Not drowned
16	Bottom of ship	Suffocation	625	497	− 28	Drowned in fresh water
17	Fell from dock into Atlantic	Drowning	431	725	+294	Drowned in salt water
18	In East River 4 days	Drowning	375	535	+160	Drowned in salt water
19	Hospital	Anesthesia	450	455	+ 5	Not drowned
20	Hospital	Morphin poisoning	341	337	− 4	Not drowned
21	Med. exam.	Shooting	512	512	0	Not drowned
22	Hospital	Cardiac disease	705	700	− 5	Not drowned
23	Hospital	Tuberculosis	591	587	− 4	Not drowned
24	In New York Bay 6 days	Drowning	250	380	+130	Drowned in salt water
25	Hudson River	Drowning	257	275	+ 28	Drowned in salt water
26	Med. exam. (found with head in bath tub)	Carbon monoxid poisoning	537	537	0	Not drowned
27	Hudson River	Drowning	462	587	+ 25	Drowned in salt water
28	New York Bay	Drowning	617	680	+ 63	Drowned in salt water
29	In bath tub (baby)	Drowning	430	370	− 60	Drowned in fresh water
30	Off Blackwell's Island	Drowning	675	975	+300	Drowned in salt water
31	In bath tub (child)	Drowning	537	500	− 37	Drowned in fresh water
32	East River	Drowning	612	731	+119	Drowned in salt water
33	Ocean Parkway	Drowning	623	668	+ 45	Drowned in salt water
34	Harlem River	Drowning	556	600	+ 44	Drowned in salt water
35	East River	Drowning	650	737	+ 87	Drowned in salt water
36	North River	Drowning	525	563	+ 38	Drowned in salt water
37	Hudson River	Drowning	501	551	+ 50	Drowned in salt water
38	New York Bay	Drowning	562	612	+ 40	Drowned in salt water
39	Hudson River	Drowning	650	725	+ 75	Drowned in salt water
40	Hudson River	Drowning	581	600	+ 19	Drowned in salt water
41	Hudson River	Fracture of skull	525	512	− 13	Not drowned

THE METHOD IN DETAIL

The pathologist should be supplied with two clean, dry glass bottles of about 30 c.c. capacity, labeled, respectively, right and left (no anticoagulant is used); two clean, dry 25 c.c. pipets from which the tips have been broken off and the ragged edges rounded in a flame (the object of this is to have a large opening so that there is less chance of a small clot obstructing the opening); also a rubber tubing with glass mouth piece for attaching to pipets when drawing up the blood. The heart, while still in place in the cadaver, is wiped dry with a clean towel, and a small slit is made with a clean, dry knife in the right ventricle. The pipet with rubber attachment is then inserted into the heart, through the incision, and careful suction is applied. If the blood does not enter the pipet readily, the latter is carefully moved into different positions within the heart chamber until the end of the pipet rests within the blood. When from 5 to 10 c.c. of blood is in the pipet and while suction is still being applied, the rubber tubing attached to it is pinched tightly to prevent the blood from returning to the heart. The pipet is then drawn from the heart and the contents emptied into the vessel marked "right." This vessel should be stoppered, labeled and sealed. With another dry knife, the left chamber of the heart is opened and the contents are put into the bottle marked "left," exactly the same technic being used.

THE ANALYSIS IN DETAIL

Pipet carefully 3 c.c. of the blood into a clean, dry Erlenmeyer flask; if the blood is badly clotted, accurately weigh 3 gm. Add 27 c.c. of distilled water and 30 c.c. of saturated

picric acid. Mix well and let stand ten minutes; then filter through dry filter paper. Pipet accurately 40 c.c. of this filtrate into another dry Erlenmeyer flask and add 10 c.c. of M/29.25 silver nitrate solution.[2] Mix thoroughly and allow to stand, preferably over night. Then filter and pipet 20 c.c. of this filtrate into a clean casserole. Add 4 c.c. of the starch-citrate mixture[2] and titrate with the standard M/117 potassium iodid solution.[2] (Austin and Van Slyke.)

$$\text{Calculation: } 125 \times \left(8 - \frac{\text{c.c. KI used}}{2}\right) = \text{mg. NaCl in 100 c.c.}$$

ALTERNATE METHOD

For precipitating the protein and formed elements, tungstic acid is used, and the technic of Folin and Wu is followed. This method is as accurate as the picric acid method:

Pipet 5 c.c. of blood into a dry Erlenmeyer flask; add 35 c.c. of water; mix thoroughly. Then add 5 c.c. of 10 per cent sodium tungstate, mix well, and add 5 c.c. of ⅔ $N.H_2SO_4$. Stopper with a well fitting rubber stopper and shake vigorously for five minutes. Filter through dry paper into a dry beaker. Pipet 20 c.c. of the filtrate into another clean, dry beaker, add 10 c.c. of M/29.25 silver nitrate solution, mix well, and let stand, preferably over night. Then filter through dry paper and pipet 15 c.c. of this filtrate into a casserole. Add 4 c.c. of the starch-citrate mixture, and titrate with M/117 potassium iodid solution.

$$\text{Calculation: } 100 \left(10 - \frac{\text{c.c. KI used}}{2}\right) = \text{mg. NaCl in 100 c.c.}$$

It is evident from the accompanying table that the chlorid content in the blood of the right and left chambers is the same in the various pathologic conditions so far examined, the greatest difference being 5 mg. in 100 c.c. of blood. In some cases the left is higher and in others the right; but the difference is never greater than 5 mg. In all those cases in which there was no doubt that death was due to drowning, the difference between the chlorid content in the right and left heart chambers was always much more than 5 mg., ranging from 19 to 294 mg. It will be noticed that in all those cases in which the drowning occurred in salt water, the chlorid content is higher in the left heart chamber; the difference between the chlorid content in the left and right heart chambers is, therefore, marked plus. In those cases in which drowning occurred in fresh water, the left heart chamber always showed the lower chlorid content, and the difference is marked minus in the table. The reason some cases have as high a difference as 294 mg., while others have only from 25 to 50 mg., depends on the amount of water going into the lungs and also on the time interval between the entrance of water into the lungs and death. The longer this time interval, the more water passes to the left heart chamber. Whenever the chlorid content in the two chambers is so close as to give a difference of only 25 mg., it is advisable to repeat carefully the determination. If the same results are obtained a second time, one can safely assume that the case is one of drowning.

The table shows the results in forty-one cases. Of these, eighteen were cases of drowning, as substantiated by the history. In each of the eighteen cases, the difference in the chlorid content was demonstrated. Fifteen of the eighteen were drowned in salt water, and the result of the analyses showed a higher chlorid content in the blood of the left chamber. Three of the eighteen were drowned in fresh water; here the analyses showed a lower chlorid content in the blood of the left chamber. Although a change in the chlorid content of the left chamber could be demonstrated in each of the eighteen cases, it must be remembered that it is possible, in exceptional cases, for a person to die through shock as soon as he hits the water, or he may die in the first of the three drowning stages. If this is the case, then the chlorid content is not altered. In all those cases in which the foramen ovale was open, the change in the chlorid content could also be demonstrated, but usually the difference between the left and right was not striking.

2. The silver nitrate solution contains, per liter, 5.812 gm. of $AgNO_3$ + 250 c.c. of concentrated nitric acid. The starch-citrate solution is made as follows: Dissolve 2.5 gm. of soluble starch in 500 c.c. of warm water; then add 446 gm. of sodium citrate and 20 gm. of sodium nitrite and heat until all are dissolved. Filter while still hot through cotton; allow to cool and make up to 1 liter. The potassium iodid solution contains 1.419 gm. in 1 liter.

SUMMARY AND CONCLUSIONS

The new method for demonstrating the presence of drowning fluid in the left heart, given in the foregoing, depends on the microchemical determination of the chlorid content in the heart chambers.

Forty-one human cases have been investigated by this method. Eighteen of these were actual drowning cases; three of the eighteen persons were drowned in fresh water and fifteen in salt water.

A difference in the chlorid content of the two heart chambers exceeding 25 mg. indicates that the individual was drowned.

Persons who are submerged while alive and die of shock during the first stage of drowning may not show this difference in chlorid content. Such cases, however, are rare.

This method is the most specific so far devised for proving that death was due to drowning.

Clinical Notes, Suggestions, and New Instruments

NONDESCENT OF THE CECUM AND APPENDIX

REPORT OF A CASE

W. CLIFFORD GARDNER, M.D., CRISTOBAL, C. Z.

It may not be amiss to report the case of undescended cecum and appendix which I had this year, to supplement, in a way, the cases reported in THE JOURNAL by Jonas.[1]

REPORT OF CASE

A negro, aged 21, whose history was negative, had for a year had frequent attacks of pain in the upper right quadrant lasting about a day at a time. The present attack began about three days before I saw him, with pain strictly localized in the gallbladder region and gradually increasing in severity. The patient had fever with sweats the night before admission. The pain at that time was so severe that it made him vomit.

There was slight jaundice of the conjunctiva. The spleen was palpable. There was tenderness on deep pressure over the gallbladder, but none over McBurney's point. There was slight rigidity over the upper right rectus. The temperature was 99 F., pulse, 60; leukocytes, 10,600.

A diagnosis of trouble with the gallbladder or a retrocecal appendix, tip, high up, was made and operation performed through a right rectus incision. The ascending colon was U shaped, with the base of the U in the normal position of the cecum. The ileum entered the colon just above this base. The colon was completely covered with peritoneum. After thorough search for a retrocecal appendix, the colon was traced upward. The cecum was adherent under the

1. Jonas, A. F.: Undescended Cecum and Vermiform Appendix, J. A. M. A. 76: 1821 (June 25) 1921.

liver, above and lateral to the hepatic flexure, the appendix extending medially and posteriorly, the tip being adherent near the neck of the gallbladder. It was removed. The gallbladder emptied readily and showed no evidence of stones or inflammation.

COMMENT

It will be observed that in this case the cecum had failed to descend, although there had developed an ascending colon of almost twice the normal length with two loops, one continuing at the hepatic flexure into the transverse colon and the other forming a blind pouch about 4½ inches long ending in the cecum. Why the cecum should have failed to rotate or descend, while an abnormal length of colon developed, I am unprepared to say. The complete investment of the ascending colon by peritoneum, giving it a mesocolon, is another anomaly, because, although this sometimes does occur, it is more rare than a mesocolon for the descending colon.

This case did not bear out Pottenger's statement that "no matter where the appendix lies, whether on the left side or on the right side of the body, or high or low, the natural place for the pain is in the lower right quadrant." No tenderness could be elicited, even on vibratory pressure over McBurney's point.

Colon Hospital.

ELECTRIC HEADLIGHT WITH TWO PERISCOPES

DEVICE BY WHICH TWO STUDENTS CAN OBSERVE EXAMINATION OR OPERATION OF EAR, NOSE, THROAT, LARYNX, AND OTHER CAVITIES *

W. PERRY REAVES, M.D., GREENSBORO, N. C.

In Figure 1 are illustrated the head band, light units, projected light and periscope. The apparatus is worn on the head the same as the head mirror; two direct light units illuminate all parts of cavities similar to the head mirror. Centrally between the light units is an aperture through which the operator sees the operative field just as he does through the opening in the head mirror. The "operator's field of vision" is determined by the size of the aperture and

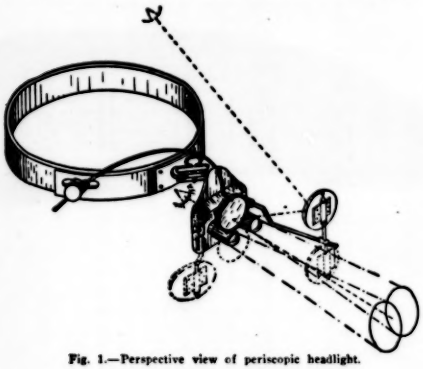

Fig. 1.—Perspective view of periscopic headlight.

the distance from the surgeon's eye. In Figure 2, the dotted circle shows the field of vision for nose or ear work. This field of vision maintains a relative fixed position to the surgeon's line of vision and the light units. The light units have three adjustments—rotary, axial and focal; rotary, to place the filaments vertically; axial, to place the area of illumination giving compound light on the center of the field of vision; focal, to give the desired area of illumination. The field of vision, double illumination on center of field of vision, surgeon's line of vision through aperture, and light units all maintain a relative fixed position to one another. A periscope mounted on and under the light units, adjusted to reflect any object in the surgeon's field of vision, enables two students to observe the examination or operation.

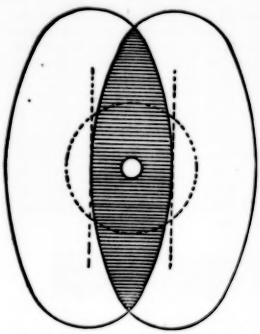

Fig. 2.—Field of vision (shown by dotted circle) for nose or ear work.

A periscopic headlight, to be practical, must meet certain requirements: It must (1) be light enough to wear with comfort; (2) be compact enough to be usable; (3) give illumination equal to the requirements of the head mirror, and (4) have a periscope to project the object in the field of vision **without** shadows or reflexes.

The apparatus will be useful for teaching in medical colleges, hospitals, clinics, and the clinician's office, the students or assistants observing examinations or operations **through** the periscope in the examination and operation by the instructor, surgeon or clinician.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

RETAINED SPONGE SIMULATING CARCINOMA OF CERVIX UTERI: REPORT OF A CASE

FREDERICK C. SMITH, M.D., PHILADELPHIA

Mrs. A. W., aged 65, colored, whose chief complaint was vaginal bleeding, which had continued for six weeks, had been married twice. The second husband had died of apoplexy seven years before. The patient had one child, who died twenty-three years previously in infancy, from unknown cause. There had been no miscarriages.

The patient had had the usual diseases of childhood; otherwise the history was negative. She had reached the age of puberty at 15, the menses occurring at twenty-eight day intervals, regular, with little or no pain, three napkins required daily, and the flow continuing from three to four days. The menopause was established at the age of 50.

The present illness began six weeks before, with irregular vaginal bleeding, an increasing, foul leukorrheal discharge, and a dull, constant pain throughout the pelvis. No weight had been lost. The appetite was good. The bowels were regular. There was a nocturia that necessitated getting up four or five times at night.

The patient was well nourished, and weighed about 170 pounds (77 kg.). The heart, chest, and abdomen were entirely negative. Pelvic examination revealed that the cervix uteri was involved in a mass which bled at the slightest touch, and there was a leukorrheal discharge so foul as to be almost unbearable. The broad ligaments were not involved, and the pelvis was otherwise negative.

July 23, 1921, we anesthetized the patient with the intention of destroying the supposed carcinoma with the Percy cautery. When the mass was grasped with a tenaculum, some of it came away and looked suspiciously like an ocean sponge. More was then pulled away, and the diagnosis was clear. An ocean sponge had been inserted into the vagina at some time and, through long retention, had involved the posterior vaginal wall and the cervix in a growth that strongly resembled carcinoma. Microscopic examination revealed that the sponge was infiltrated by a cellular exudate.

The patient had never been operated on and denied any recollection of ever inserting a sponge for any purpose. She made an uneventful recovery and was discharged from the hospital at the end of two weeks, symptom free.

6247 Haverford Avenue.

UNIQUE CASE OF FOREIGN BODY IN THE RECTUM

MARCELL HARTWIG, M.D., LOS ANGELES, CALIF.

This case is, I think, unique in the annals of medicine. If I had not had a witness, the report would be in danger of being taken as a hoax.

Three years ago, in Buffalo, one of my patients brought to my office a man from a small hamlet of Pennsylvania, with the story that two loafers had attacked the man, forcing a stick into the rectum. It broke off, and he asserted that it seemed to be in the region of the gallbladder. On examination, I felt exactly in the location of the gallbladder a tumor, which, bimanually, was one with the ragged end of the stick, in the hollow of the sacral rectum. Fearing, naturally, to exert pressure, I manipulated very carefully and succeeded, with two fingers in the rectum, in bringing the lower end forward; then, with almost no pressure from above, the stick slid out. The ragged end was, of course, a fracture of a longer stick, which broke while the patient fought with the assailants.

Stick, 11 inches (28 cm.) long, removed from rectum.

My explanation, which Prof. H. D. White deems correct, is that the man had an extreme mobility of the sigmoid, due to a long mesion and the presence of a quantity of mushy fecal matter. This condition permitted the high ascent of the stick, without rupture of the intestine, as the course showed, since the patient, aside from the constant futile desire to move the bowels, had had no trouble worth mentioning, and he felt and remained well after removal of the stick. Professor White stated that such high mobility of the sigmoid is not rare. In a case in which I performed a cecosigmoid anastomosis, I observed the same condition.

One more interesting point is a report of Prof. A. L. Grover, a year later, about the nonpersistence of the colon bacillus in feces dried at room temperature on the stick, which was 11 inches (28 cm.) long, quite rough, and irregular in shape.

341 South Alvarado Street.

Special Article

REPORT OF THE COMMITTEE ON ESTIMATING COMPENSATION FOR EYE INJURIES *

SECTION 1.—The report of this committee deals only with the loss in visual efficiency, the result of injury, and does not attempt to take into account the economic efficiency or competitive ability of the injured from the standpoint of general economics.

SEC. 2.—Compensation shall be estimated on the degree of loss to the following essential functions of vision:[1] Function A, visual acuity; Function B, binocular single vision, and Function C, field of vision.

SEC. 3.—The total economic loss of all of the essential functions of both eyes shall be considered as *total permanent disability*.[2]

SEC. 4.—The total economic loss of all of the essential functions of *one eye* shall be considered the basis of compensation for ocular injury and shall be reckoned as 100 per cent. loss, entitling the injured to 100 per cent. or the full compensation awarded for industrial blindness, or total permanent disability of one eye.[2]

SEC. 5.—The complete loss of one eyeball shall entitle the injured to 110 per cent. compensation.

TABLE 1.—(FUNCTION "A", CLASS "*a*").—VISUAL ACUITY FOR DISTANCE IN PERCENTAGES, CONSIDERING THE FUNCTION OF VISUAL ACUITY ONLY, AND THE COMPENSATION FOR DISTURBANCES OF VISUAL FUNCTION "A" CLASS "*a*," IN PERCENTAGE

	Visual Acuity at 6 Meters 20 Feet	Height of Letter in Cm. at 20 Feet	Visual Angle at 20 Feet in Minutes	Visual Acuity in Percentage	Per Cent. of Compensation for Visual Acuity Only
6/6	20/20	0.891	5.0	100	0
6/9	20/30	1.337	7.5	95	2.5
6/12	20/40	1.783	10	90	5
6/15	20/50	2.229	12.5	85	7.5
6/18	20/60	2.675	15	80	10
	20/70	3.121	17.5	75	12.5
6/24	20/80	3.567	20	70	15
	20/90	4.012	22.5	65	17.5
6/30	20/100	4.458	25	60	20
	20/110	4.900	27.5	55	22.5
6/36	20/120	5.349	30	50	25
	20/130	5.791	32.5	45	27.5
6/42	20/140	6.237	35	40	30
	20/150	6.682	37.5	35	32.5
6/48	20/160	7.128	40	30	35
	20/170	7.573	42.5	25	37.5
6/54	20/180	8.019	45	20	40
	20/190	8.464	47.5	15	42.5
6/60	20/200	8.917	50	10	45
	20/210	9.355	52.5	5	47.5
6/66	20/220	9.801	55	0	50

TABLE 2.—(FUNCTION "A", CLASS "*b*").—VISUAL ACUITY FOR NEAR VISION IN PERCENTAGES, CONSIDERING THE FUNCTION OF VISUAL ACUITY ONLY; AND THE COMPENSATION FOR DISTURBANCES OF VISUAL FUNCTION "A" CLASS "*b*," IN PERCENTAGE

Visual Acuity at 14 Inches	Height of Letter at 14 Cm. Inches	Visual Angle at 14 Inches in Minutes	Snellen Type Approximate Equivalent	Visual Acuity in Percentage	Per Cent. of Compensation for Visual Acuity Only
14/14	0.051	5	D=0.37	100	0
14/21	0.077	7.5	D=0.50	95	2.5
14/28	0.103	10	D=0.75	90	5
14/35	0.129	12.5		85	7.5
14/42	0.154	15	D=1.00	80	10
14/49	0.180	17.5	D=1.25	75	12.5
14/56	0.206	20		70	15
14/63	0.231	22.5	D=1.50	65	17.5
14/70	0.257	25	D=1.75	60	20
14/77	0.283	27.5		55	22.5
14/84	0.308	30	D=2.00	50	25
14/91	0.334	32.5		45	27.5
14/98	0.360	35	D=2.50	40	30
14/105	0.386	37.5		35	32.5
14/112	0.411	40		30	35
14/119	0.437	42.5	D=3.00	25	37.5
14/126	0.463	45		20	40
14/133	0.488	47.5	D=3.50	15	42.5
14/140	0.514	50		10	45
14/147	0.540	52.5		5	47.5
14/154	0.565	55	D=4.00	0	50

SEC. 6.—The above estimates for compensation for eye injuries do not take into account any cosmetic defect which may result: for this additional compensation shall be awarded.

SEC. 7.—Certain types of ocular injuries will result in disabilities, the value of which cannot be estimated by any established precedent. These are disturbances of color vision,

* Read before the Section on Ophthalmology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. An injury may result in the loss or impairment of any or all of the functions mentioned above; consequently, compensation cannot be estimated justly upon visual acuity alone, as is done in the majority of tables. Depth perception is recognized as an essential function of the eye, but is included under Function B for the reason that, for all practical purposes, it exists as long as the visual acuity of either eye is not reduced below industrial blindness, or there is no loss of binocular single vision.

2. Injury to both eyes sufficient to cause bilateral economic loss of vision or industrial blindness is considered as totally incapacitating, and the injured shall be awarded compensation for permanent total disability.

3. Modifications of this will be found in Sections 5, 6 and 7. In view of the fact that the majority of state laws have taken the loss of vision of one eye as a basis for compensation, this committee has adopted as the basis for estimating compensation the total loss of all of the essential functions of one eye.

disturbances in adaptation to light or dark, metamorphopsia, entropion, ectropion, lagophthalmos, and epiphora. In such cases, compensation must be based on the loss of efficiency in the occupation in which the injured was engaged and shall be additional to the compensation which may be computed because of the partial or because of the total loss of the essential functions of vision.

SEC. 8.—Compensation shall not be computed until all adequate and reasonable operations and treatments known to medical science have been attempted to correct the defect;

TABLE 3.—(FUNCTION "B").—VALUE OF BINOCULAR SINGLE VISION IN PERCENTAGE OF COMPENSATION

	Compensation Per Cent.
Presence of binocular single vision	0
Total loss of binocular single vision	25

further, at least three months shall elapse after the last visible trace of inflammation has disappeared before the examination, on which final compensation is to be estimated, shall be made, except in cases of optic nerve atrophy, sympathetic ophthalmia, and traumatic cataract. In such cases, at least twelve months and not more than sixteen months shall intervene before the examination shall be made on which final compensation is to be estimated.

SEC. 9.—The best possible visual acuity for distance or for near (with correcting glasses if necessary) shall be used in the estimation of compensation. If there exists a difference of more than four diopters of spherical correction between the two eyes, the best possible acuity of the injured eye without glasses, or with lenses of not more than four diopters spherical difference from the fellow eye, shall be the visual acuity on which compensation shall be estimated.

TABLE 4.—(FUNCTION "C").—VALUE OF CONCENTRIC CONTRACTION OR THE EQUIVALENT THEREOF OF THE VISUAL FIELD OF ONE EYE IN PERCENTAGE OF COMPENSATION *

Contraction to	65 degrees	equals	0.00 per cent. compensation
Contraction to	60 degrees	equals	2.08 per cent. compensation
Contraction to	55 degrees	equals	4.16 per cent. compensation
Contraction to	50 degrees	equals	6.25 per cent. compensation
Contraction to	45 degrees	equals	8.33 per cent. compensation
Contraction to	40 degrees	equals	10.40 per cent. compensation
Contraction to	35 degrees	equals	12.50 per cent. compensation
Contraction to	30 degrees	equals	14.58 per cent. compensation
Contraction to	25 degrees	equals	16.66 per cent. compensation
Contraction to	20 degrees	equals	18.75 per cent. compensation
Contraction to	15 degrees	equals	20.83 per cent. compensation
Contraction to	10 degrees	equals	22.91 per cent. compensation
Contraction to	5 degrees	equals	25.00 per cent. compensation

* To obtain the amount of concentric contraction of the visual field of one eye, determine the amount of contraction for form at each of the four principal meridians (Axis 0, Axis 90, Axis 180, Axis 270). The mean of the four represents the concentric contraction or equivalent thereof of the visual field of one eye.

SEC. 10.—The proportionate value of the essential functions of *one eye* shall be:

		Compensation[4] Per cent.
Function A	(*a*) Industrial loss of visual acuity for distance or (*b*) Industrial loss of visual acuity for near	 50
Function B—Total loss of binocular single vision		25
Function C—Total loss of field of vision		25
Total loss or all of the above functions or the award for industrial blindness for one eye		100

SEC. 11.—Visual acuity of 20/20 shall be standard or normal for distance.[5]

Visual acuity of 20/220 shall be total economic loss of visual acuity or industrial blindness for distance.

Visual acuity of 14/14 shall be standard or normal for near.

Visual acuity of 14/154 shall be total economic loss of visual acuity or industrial blindness for near.

SEC. 12.—In injuries involving both eyes, compensation shall be estimated on a basis of loss of the essential functions of each eye separately according to Section 10. Total compensation due shall be the sum of the compensation estimated for each eye alone. If the compensation for each eye is greater than 70 per cent., the above rule shall be modified and additional compensation shall be awarded; such compensation shall be increased in proportion to the increased seriousness of the visual loss, reaching that awarded for total general disability or total industrial incapacity.

SEC. 13.—In case of an injury to an eye in which the vision has been defective prior to such injury, compensation shall be awarded only for such portion of the disability as may be reasonably attributed to the accident.

NELSON M. BLACK, Chairman,
HARRY S. GRADLE,
ALBERT C. SNELL.

4. Compensation shall be estimated upon the loss in visual acuity for distance in those occupations in which the working distance is greater than an arm's length. Compensation shall be estimated upon the loss in visual acuity for near in those occupations in which the working distance is at arm's length or less.

5. Visual acuity for distance shall be determined at 20 feet, using any test conforming to the Snellen standard, the chart having an illumination of not less than 3 foot candles and no direct light to be within 26 degrees of the line of vision.

Visual acuity for near shall be determined at 14 inches, using any test conforming to the Snellen standard, the chart having an illumination of not less than 3 foot candles.

The unit for standard visual acuity for distance has been established by usage and is a character subtending a 5 minute angle, and whose component parts subtend a 1 minute angle.

The unit for industrial blindness for distance (V=20/220) is the approximate average of the units used throughout the United States to represent industrial blindness. The visual angle subtended by the characters representing industrial blindness vary between 50 and 60 minutes, the average being 55 minutes.

The unit for standard visual acuity for near is established as 14/14, or ability to discern characters which subtend a 5 minute angle, and whose component parts subtend a 1 minute angle at 14 inches.

The unit for industrial blindness for near is based on the same ratio as that for distance; i. e., a character subtending an angle eleven times as great at 14 inches, or V = 14/154.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

IODIPIN 10 PER CENT.—Iodized Sesame Oil 10 per cent.—Merck. An iodine addition product of sesame oil containing from 9.8 to 11.2 per cent. of iodine in organic combination.

Actions and Uses.—Iodipin 10 per cent. acts in the system similarly to the inorganic iodides. Iodipin 10 per cent. is not broken up in the stomach; but a portion of the iodine is split off as soon as it enters the intestine, the remaining compound is readily absorbed, and, as in the case of other fats, it is largely deposited in the tissues where it is slowly split up. The action of iodipin 10 per cent. is exerted more slowly than that of the inorganic iodides (see Iodine Compounds, Iodized Fats and Fatty Acids, N. N. R., 1921, p. 152).

Dosage.—From 4 to 16 Cc. (1 to 4 fluidrachms), three or four times a day. Iodipin 10 per cent. should be exposed to the light to prevent its darkening.

Supplied in the form of tablets only.

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Tablets Iodipin 10 per cent.—Merck: Iodipin 10 per cent. Merck—8 grains.

Iodipin is prepared by the action of iodine chloride on sesame oil in sufficient quantity, theoretically calculated, to produce the required iodization.

It is a yellow, oily liquid, having a purely oleaginous taste. It is insoluble in water.

If to 1 Cc. of iodipin in 10 Cc. of chloroform a few drops of phenolphthalein solution are added, the addition of 0.3 Cc. (1 drop) of half-normal sodium hydroxide should produce a red color (*limit of acidity*).

Boil 1 Gm. of iodipin, accurately weighed, for a few minutes in a small flask with 15 Cc. of alcohol and 3 Gm. of potassium hydroxide, transfer the liquid to a porcelain dish, evaporate on the water bath and incinerate the residue over a gentle flame. Dissolve the ash in water, make up to 100 Cc. and filter. To 25 Cc. of the filtrate add 3 Cc. of 25 per cent. hydrochloric acid and 50 Cc. of freshly prepared chlorine water and boil until the excess of chlorine is expelled. Cool, add 2 Gm. of potassium iodide and titrate the liberated iodine with tenth-normal sodium thiosulphate. The amount of the iodine found is not less than 9.8 per cent. nor more than 11.2 per cent.

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SATURDAY, NOVEMBER 19, 1921

NATIONAL HEALTH INSURANCE IN ENGLAND STILL AN EXPERIMENT

As our readers will have noticed from our recent London letters, the proposition to repeal the Health Insurance Act is a live question now before the English profession and the public. The act has been in force for some nine years, but in actual operation for about eight years, during five years of which time the English were engaged in war. The three-year postwar period has been one of economic difficulties, industrial unrest and high taxation. The general demand for a reduction of government expenses in order to lessen the burden of taxation has led to a critical discussion of governmental activities. Among others, the national insurance scheme has come under consideration, and its abolition is being discussed in both the medical and the lay press. In a recent article in the *British Medical Journal*, Dr. Alfred Cox, secretary of the association, asks: "Does the medical profession wish the national health insurance system to continue?" "This question," he says, "has been deliberated upon for a considerable time and there is good reason to believe that in a very short time we shall be forced to answer it." Dr. Cox states that national health insurance "is a costly piece of machinery," and believes that it is unnecessarily costly because of the administrative methods laid down by the act. He says, however, that the government "would never have got its bill through" without these arrangements. In 1919, for which complete official figures are available, it cost the taxpayers of England approximately £7,230,000; it cost the employers £7,091,000; a total approximating $70,000,000.

From the politician's point of view, the system has apparently no friends. The approved societies—that is, the old Friendly Societies which bought physicians' services at wholesale and retailed them to their members—object to the insufficient allowance made them for administrative purposes and the disproportionate amounts which they claim are paid to doctors, whom they accuse of poor work. The president of the Friendly Societies, in the national conference in September, said: "It was patent that they [the Friendly Societies] were not getting value for the enormous sum paid to the medical profession. No one was satisfied, unless it was the doctors, with the present system."

The doctors, on the other hand, claim that too much money is paid for administrative work and not enough for medical services. The insured person also is dissatisfied. The *Daily Express*, one of the leading English newspapers, recently asserted that after a large amount of correspondence on the subject it could not find any one who approved the system. On the other hand, the *Lancet* believes it is more probable that the scope of the insurance act will be extended than that the act will be abolished. A plan for providing additional services and care has already been put into effect in Brighton and Sussex, under the name of the National Providing Act for Hospitals and Additional Medical Services. The *Lancet* goes on to say that arrangements have been made with three of the London hospitals by which an annual subscription of one or two pounds will insure an individual or family against all expenses incurred in connection with special treatment or home nursing. The *Lancet* considers that the objection of the medical profession has dwindled to small proportions, and that insurance practice in industrial areas is sufficiently remunerative to attract men and women of high professional education. The Birmingham *Post* admits the need of reducing expenditures for health insurance, but suggests that it may be possible to economize in other directions than on physicians' fees. It holds that the medical service under the insurance act is a great improvement on the service rendered under the old voluntary charity practice system (that is, under the Friendly Societies system) when the remuneration to physicians was only four, and sometimes only three, shillings annually for each patient. One proposition is that the capitation system be abolished, and that each patient pay the physician for actual services rendered, partly out of his own pocket, and partly out of his insurance funds. Such a plan would, of course, be simply a reversion to the traditional plan of personal medical attention, the only difference being that the patient would be subsidized by the state in paying his doctors' bills.

It must always be remembered, in discussing health insurance in England, that the British medical profession for generations has carried on to a large extent an accepted form of contract practice with the so-called Friendly Societies, under which the position of the physician, and the compensation, were much inferior to those under the health insurance plan. Health insurance, therefore, has improved the financial condition of some physicians.

As we stated editorially some months ago, "while compulsory health insurance may be a good thing in England, conditions in this country at this time are such that there is neither a need nor a desire for it. It is not worth while to take a nauseous medicine to cure

V. 7
1921

a disease that does not exist." That opinion is now confirmed; for the unavoidable conclusion from the entire mass of evidence is that health insurance, even in England, after being in force for nearly ten years, is still an experiment, and a costly and by no means a universally satisfactory experiment at that. It has not bettered public health conditions. The two chief arguments of its proponents in this country—that its adoption would improve both public and individual health conditions—have not in any way been substantiated by the trial of the plan in England.

MONILIA PSILOSIS AND SPRUE

An inspection of the medical literature of the last quarter century reveals a noteworthy list of microorganisms which had not previously been suspected as parasitic invaders of the human alimentary tract but which have now been discovered there under conditions demanding serious consideration. The list includes certain species of *Monilia*, the generic name used in the literature of fermentation for certain forms of molds in which the conspicuous development consists of chains of cells like strings of beads. They are commonly found in breweries and in bread, cereals and other foods. Thrush has been attributed to the activities of a monilia in the body.

Several years ago, Bahr expressed the opinion that sprue is due to a monilia. This disease, also known as psilosis, which has been defined by Manson as an insidious, chronic, remitting inflammation of the whole or part of the mucous membrane of the alimentary canal, occurring principally in Europeans who are residing or who have resided in tropical or subtropical climates, occurs in the Southern states of this country. Etiologically, it has been likened in the past to a number of formerly unexplained conditions, such as pellagra and scurvy, apparently because dietary changes which produce relief in these diseases occasionally are helpful in the treatment of sprue. Ashford, who has devoted much attention to the etiology of this disease, particularly in Porto Rico, has championed the view that a specific *Monilia* assumes a determining part in it. Furthermore, he has described *Monilia psilosis*, an organism isolated from indigenous cases of sprue.[1]

Hannibal and Boyd[2] of the University of Texas Department of Medicine have also been conducting laboratory investigations on the monilias of the gastrointestinal tract. *Monilia psilosis*, conforming to Ashford's reports, has been isolated by the Texas microbiologists from five sprue patients; but the same or a highly similar monilia has likewise been discovered in a much larger number of control persons who could scarcely be regarded as suffering from sprue. The results of experimental feeding on laboratory animals, though by no means conclusive, suggest that in some instances this monilia may produce an acute gastroenteritis, and reproduce some of the clinical manifestations of sprue. Since cultures were not made from the heart's blood, the existence of a mycotic septicemia is undetermined. The results correspond with the feeding experiments reported by Ashford in 1916. Nevertheless, by reason of the fact that 50 per cent. of their control human subjects, including some with thrush, were harboring what appeared to be the same organism that was recovered from patients presenting the symptomatology of sprue, Hannibal and Boyd are not convinced that *Monilia psilosis* is the cause of this disease. The animal experiments are, it is true, highly suggestive that this organism may exhibit pathogenic properties; yet unless one assumes that many persons are acting as healthy carriers for a pathogenic monilia, it seems more likely that there are factors other than the presence of the organism in the gastro-intestinal canal that are of decisive causative importance in the genesis of sprue.

1. Ashford, B. K.: Am. J. M. Sc. **154**: 157 (Aug. 1917.
2. Hannibal, Edna A., and Boyd, M. F.: The Monilias of the Gastro-Intestinal Tract in Relationship to Sprue, Am. J. Trop. Med. **1**: 165 (May) 1921.

RECENT DEVELOPMENTS CONCERNING ACIDOSIS AND ALKALOSIS AND THE MISUSE OF ALKALI THERAPY

It is a truism that advances in pure science cannot be applied directly to practical problems with safety; they should first undergo a process of digestion and assimilation. This truism is illustrated by the accumulating experience gained by the application of those principles of physical chemistry which control the acid-alkali balance of fluids—that is, the hydrogen-ion concentration (commonly called p_H)—to the problems of clinical medicine. Following the valuable service of L. J. Henderson in presenting these principles in abstractly correct form, they were for some years applied clinically with an unphysiologic crudeness. The living body with all its intricate and delicate self regulation was treated as little more than a beaker. If its contents were supposed to be too acid, the obvious corrective was administration of sodium bicarbonate. The invention by Van Slyke of his instrument for the determination of the carbon dioxid capacity has given this unfortunate tendency free play. It was supposed for a time that the finding of a low alkali reserve in the blood of a patient constituted an absolute demonstration of acidosis and a clear indication for alkali therapy. The profound difference between physiologic equilibrium and the conception of equilibrium which the physical chemist employs was not appreciated.

It now appears, however, that a low alkali reserve is by no means always an indication of acidosis. It may occur with quite the contrary condition. Nor does it follow that acidosis is necessarily an indication for administration of alkalis. It may possibly be rather an effort on the part of the body, through the regulative influence of carbon dioxid, in calling alkali into the

blood, to increase the bicarbonate of the blood, and may best be assisted in some other way than by administration of alkalis. The reaction of the blood (the p_H) is not dependent solely on the alkali but on the ratio of alkali to carbonic acid. Thus, as Yandell Henderson and H. W. Haggard [1] have shown, a reduction of alkali reserve may be due to either of two almost diametrically opposite processes. The acidotic process consists in the formation of an excess of strong acids which neutralize alkali. According to their experiments alkali therapy may be advantageously given in any condition of low alkali reserve which is demonstrated with certainty to be due to this process. The other, or acapnial, process occurs whenever respiration is augmented so that the carbon dioxid content of the blood and tissues is abnormally decreased. This leaves the alkali in relative excess, and the consequent alkalosis is met by the body by a withdrawal of part of the alkali from the blood. The condition is then one of alkalosis along with low blood alkali. Experimentally it is found that animals in this condition are adversely and even fatally affected by administration of sodium bicarbonate; but, when given inhalations of carbon dioxid, diluted with air, they respond by a recall (presumably from the tissues) of a normal alkali reserve into the blood. These investigators even suggest that acidosis (in the physicochemical sense of high ratio $H_2CO_3 : NaHCO_3$) is always an indication of an effort on the part of the body to call alkali into the blood. If alkali is present in the body, this physiologic effort is best assisted, not by administration of alkali, but by inhalation of carbon dioxid. Among the conditions of low blood alkali thus far induced experimentally, more have been found due to the acapnial than to the acidotic process. For instance, the adjustment to altitude,[2] by which the blood alkali of people in Colorado is normally lower than in inhabitants of the sea coast, is evidently effected through the acapnial process, and is brought about through alkalosis, not acidosis.

Nine possible combinations of normality, acidosis and alkalosis with high, low and normal alkali reserve have been shown theoretically or produced experimentally by Henderson and Haggard; Van Slyke [3] likewise accepts this view of the theoretical possibilities as a form in which future clinical observations may be arranged, although not all of these nine conditions have as yet been definitely identified in man.

Particular importance attaches to the low blood alkali following anesthesia and surgical operation. The administration of sodium bicarbonate after operation has become a routine procedure in a number of hospitals. But, if Henderson, Haggard and Coburn [4] are correct, it is the acapnial, not the acidotic, process by which this low alkali is produced. According to these investigators, therefore, the condition should be treated with inhalations of carbon dioxid instead of with alkali.

Now Healy [5] reports a number of cases of tetany and death which he traces to an abnormally large administration of sodium bicarbonate after anesthesia and operation. Similar cases, after the cause was suspected, were found to respond favorably to administration of calcium lactate. Collip and Backus [6] have shown that tetany may follow excessive (voluntarily forced) respiration in the otherwise normal human subject. Wilson, Stearns and Thurlow [7] found parathyroid tetany to be associated with alkalosis. Greenwald,[8] who likewise has found that tetany may be induced in dogs by means of sodium bicarbonate, accordingly infers that in the cases reported by Healy the administration of sodium bicarbonate, combined with the condition induced by anesthesia, was responsible for the disturbance in the balance between the calcium and sodium of the blood which induced the cases of tetany and death.

From these developments it would seem that alkali therapy, when applied indiscriminately to all conditions of low alkali reserve, may in some cases result in the error of counteracting a symptom which is really due to a regulative response of the body and should rather be assisted.

1. Haggard, H. W., and Henderson, Yandell: J. Biol. Chem. **39**: 163 (Aug.) 1919; **43**: 3, 15 (Aug.) 1920; **47**: 421 (July) 1921.
2. Henderson, Yandell: Science **49**: 431, 1919; J. Biol. Chem. **43**: 29 (Aug. 3) 1920.
3. Van Slyke, D. D.: J. Biol. Chem. **48**: 153 (Sept.) 1921.
4. Henderson, Yandell; Haggard, H. W., and Coburn, R. C.: The Therapeutic Use of Carbon Dioxid After Anesthesia and Operation, J. A. M. A. **74**: 783 (March 20) 1920; The Acapnia Theory, Now, ibid. **77**: 424 (Aug. 6) 1921.
5. Healy, W. P.: Am. J. Obst. & Gynec. **2**: 164 (Aug.) 1921.
6. Collip, J. B., and Backus, P. L.: J. Biol. Chem. **51**: 568 (April) 1920.
7. Wilson, D. W.; Stearns, T., and Thurlow, M. G.: J. Biol. Chem. **23**: 89, 123, 1915.
8. Greenwald, I.: Proc. Soc. Exper. Biol. & Med. **18**: 228, 1921. Healy (Footnote 5) discussion.
9. Dale, H. H.: Recent Tendencies in Chemotherapy, President's Address, Section of Therapeutics and Pharmacology, Proc. Roy. Soc. Med. **15**: 7, 1921.

RECENT TENDENCIES IN CHEMOTHERAPY

Since the achievement of Ehrlich in working out, by systematic procedures of chemical synthesis and animal experiment, the arsphenamin group of therapeutic agents, there has been cherished the hope that the time would soon arrive when the therapeutics of infectious diseases could be made an exact chemical procedure. What prospect could be more alluring than the establishment of the chemical properties of the protoplasm of the parasite and the host, and the immediate preparation, on the basis of recognized chemical principles, of the necessary drug which would select and destroy the parasitic substance, leaving unscathed the protoplasm of the host. "Magic bullets" was the characteristically picturesque title which the imaginative Ehrlich gave to these chemical missiles which should drive out invading parasites. Applying the side-chain principle of his immunologic theory, he conceived the possibility of discovering substances that would fix themselves to the receptor groups of the parasites, and introduce a toxic radical to destroy them. As Dale [9] has pointed out in an illuminating address, this purely

chemical conception does not seem to work as a rule of procedure, despite the success achieved in the discovery of the parasiticidal arsenicals.

Even the earlier successes obtained in Ehrlich's laboratory in the attempt to establish the principles of chemical structure in relation to bactericidal action have been found to be illusory, for no constant laws can be established. Thus, it was at first reported that certain modifications of the phenol derivatives, such as the introduction of halogens, or of methyl groups, increase bactericidal action, while certain other changes have the opposite effect. But it was not long before Ehrlich's collaborator in this work, Bechhold,[10] found it necessary to report that the effect of a chemical on one species of bacteria may not be duplicated with another species, and hence general laws cannot be deduced. In these experiments the conditions were relatively simple, since the bacteria were studied in vitro; when they are in the body the conditions are complicated enormously by the unknown factors introduced by the blood and tissues, and so the establishment of constant laws becomes still less probable for bacteria that are producing disease.

With arsphenamin itself, the explanation of the spirocheticidal action seems to be quite different from what Ehrlich had supposed, which fact, of course, does not lessen the value of his achievement. Arsphenamin has surprisingly little effect on spirochetes outside the body, and apparently the living tissues play a part in the destruction of the organisms in the therapeutic use of the drug. Probably the tissues change the arsphenamin to something that is more toxic to the parasite, as Voegtlin has suggested. That is to say, arsphenamin, which was supposed to act by virtue of its selective affinity for the parasite, its "parasitotropic" property, in the Ehrlich nomenclature, more probably is active because it is "organotropic." Dale also points out that emetin, despite its undoubted effect in human amebic dysentery, showed little or no effect on *Endameba histolytica* obtained from experimental lesions in kittens, nor did emetin influence the course of dysentery produced in kittens by strains of ameba from human cases which were curable with this drug.

Apparently, then, a chemical agent may have a different effect on the same parasite in different hosts, and in this case the effect on the parasite is presumably an indirect one through action on the tissues of the host. A similar case is presented with quinin, which is inefficient in the *Halteridium* infections in birds with an organism closely similar to the malarial parasite. Or, again, we find that antimony and potassium tartrate seems to have a specific chemotherapeutic action on such unrelated parasites as those of kala-azar and bilharziasis. There is certainly no theoretical ground for supposing that a substance which cures kala-azar is likely to remove infection by bilharzia. Emetin also is said to have at least to some extent a remedial action on these two diseases. It seems difficult to suppose that emetin should owe its efficacy in amebic dysentery, on the one hand, and in bilharzia infection, on the other, to a specific chemical relationship both to *Endameba histolytica* and to the schistosomes and their ova; or that the latter should possess specific receptors both for emetin and for antimony and potassium tartrate. From such considerations as these, Dale reaches the conclusion that, brilliant with promise in its beginning, chemotherapy seems to have reached a point at which its successes are the result of luck and empiric trial; nothing but fuller knowledge can give us that rational basis of theory from which an orderly, scientific progress can result.

10. Bechhold: Halbspezifische chemische Desinfektionsmittel, Ztschr. f. Hyg. u. Infektionskr. **64**: 113, 1909.

THE STUDY OF RELAPSING FEVER—A RECORD OF PERSONAL HEROISM

The records of the United States Army are not lacking in instances of courage and heroism that surpass even the splendid virtue of "devotion to duty." Many persons are accustomed to think of the highest types of self-sacrifice for one's country and fellow man as being confined to the exigencies of combat. The history of the warfare against disease reveals some equally thrilling examples of heroic personal conduct. The sublime self-sacrifice of the group of investigators constituting the Yellow Fever Commission of the U. S. Army, who submitted themselves to inoculation in order to demonstrate the relation of the *Stegomyia* mosquito to the spread of yellow fever, is the pride of the medical profession. One of them, Jesse Lazear, lost his life as a direct outcome of the tests.

To this list may now be added the names of three soldiers, Privates K. K. Glover, O. F. Leukert and L. N. Jourden, commended in a general order of the service of the military police of the Panama Canal Department, as volunteers worthy of the highest commendation from their fellow men. By means of their cooperation and voluntary assistance, it has been proved that the human tick *Ornithodorus talaje* (Guérin-Meneville) is the transmitting agent of relapsing fever in Panama. The army order adds that by their self-sacrifice these three men, selected from thirty who volunteered for the experiment and showed their willingness to imperil their lives in the cause of humanity, have aided in establishing a scientific fact which will aid in the control of disease and result in less sickness and loss of life among our troops operating in the field and on the isthmus.

Under the name of relapsing fever a number of infections are at present included. Accurate accounts of this disease were published nearly two centuries ago. It made its first recorded appearance in the United States at Philadelphia in 1844. Ever since Obermeier, in 1873, detected in the blood of patients suffering from relapsing fever what was formerly designated as a

spirillum but is today classed as a spirochete, this malady has been regarded as a spirochetal infection. The spirochetes involved are currently believed to belong to different species, mainly perhaps because experimental animals immune to infection by one of the spirochetes seem to be susceptible to infection by another. All the types of relapsing fever run a similar clinical course.

Accumulated evidence has made it more than probable that suctorial insects, such as bedbugs, ticks or lice, are concerned in the transmission of the organism producing relapsing fever. For relapsing fever in Panama the proof has now been furnished by the army volunteers that the human tick *Ornithodorus talaje* is a transmitting agent. These insects are somewhat similar in habits to the bedbug, remaining secreted in the cracks and crevices of the beds and walls by day and coming out at night to feed on the occupants. After becoming engorged with blood they again return to a hiding place. Typical spirochetes have been found in naturally infected human ticks in Panama by Bates, Dunn and St. John[1] of the Board of Health Laboratory and Ancon Hospital in the Canal Zone. One volunteer was infected with relapsing fever by being bitten by naturally infected ticks; a second, by a hypodermic injection of such insects; a third, by injection of blood from a rat which had been infected with relapsing fever by material from infected ticks. The demonstration was complete; and fortunately the volunteers recovered after treatment with arsphenamin. Thus a new and important chapter has been added to the history of the etiology of one of the spirilloses.

Current Comment

DOCTORS, BEWARE!

We are undone—or possibly it would be more accurate to say that we are about to be undone. The medical profession is to meet its Napoleon. A few days ago those fortunate individuals whose names are on the mailing list of the Palmer School of Chiropractic, Davenport, Iowa, received a three-page letter from Napoleon Hill, the editor of *Napoleon Hill's Magazine*, "A Magazine of Economic Philosophy" having offices in New York City. Napoleon has a secret for the chiropractors—such a vital secret that he can make public only a small part of it at this time. It is this: Napoleon, "in addition to carrying on a systematic propaganda . . . in behalf of Chiropractic" in his magazine, has "arranged with one of the best men in the moving picture business to write a psychological play that will be filmed and shown broadcast over America and in Canada." But let Nap. tell it:

"The name of the film is INTOLERANCE, and plays up Chiropractic, the new profession that is bringing health to millions of people without the use of poisonous drugs and surgeons' knives. This play is one of the most powerful boosts for Chiropractic. It will show the California martyrs who were sent to jail by the Medical Trust; it will play on the emotions as a master violinist plays on the strings of his instrument, leaving no dry eyes within sight of the screen where it is shown. It will carry the audience down through the 'Valley of Shadow,' back into the dark ages, and on up to the present."

Napoleon says further: "I am producing this play at my own expense, or rather at the expense of the magazine." Nor is that all: "I intend to play one of the leading rolls [*sic!*] in the picture, personally." One finds it difficult to visualize a Napoleon rolling, but stranger things have happened. It must be quite a risky piece of rolling, too; a dashing, dare-devilish, Fairbanksian roll, for Napoleon says that after his rolling: "My life will not be safe, let alone my being welcome when I go back down home where I have two uncles who are M.D.'s." But to get down to brass tacks. Every chiropractor who subscribes for *Napoleon Hill's Magazine* (price $3.00) will have one dollar of his subscription set aside "as a fund with which to produce this Chiropractic film play."

"There are over 10,000 of you Chiropractors in the field. Each of you is good for a subscription for your own office, and in addition to this you can sell at least half of the patients who pass through your office a subscription."

The film, we are told, "will constitute a whole show, of practically one hour." And Napoleon is going to make a success of it, for "by the eternal there is something more than profits to work for in this world" and, as Napoleon quaintly says, "as I am both the front legs and hind legs of it I naturally aim to make it reflect credit on my efforts." We do not know Napoleon, but from his letter and from a perusal of one copy of his magazine we can admit that he will doubtless reflect credit on both the front legs and the hind legs; but can he make the long ears wag naturally? "When the film is shown in your city it will be followed by a slide with your advertisement on it, without cost to you." Another inkling of Napoleon's great secret is revealed when he says that this chiropractic film "is but one of the steps I am taking to insure a Chiropractor as health counselor to the President of the United States."

THE EVACUATION OF THE BOWEL IN INFANCY

The period of transit for food residues through the alimentary tract of adult persons is fairly well known. In health and under normal conditions of digestion and defecation, the contents of the bowel end their sojourn there within from twenty-four to thirty-six hours, of which the major duration is spent in the large intestine. The comparable facts with regard to infants have not been ascertained with equal certainty, if one may judge from the paucity of published details. Kahn[1] has recently secured data which help to fill the gaps in our knowledge. According to his observation, the stay of residues in the alimentary tract of the nursling is comparatively short. The variations in healthy children ranged from four to twenty hours, with an approach to fifteen hours as the most representative period. The

1. Bates, L. B.; Dunn, L. H., and St. John, J. H.: Relapsing Fever in Panama: The Human Tick Ornithodoros Talaje, Demonstrated to be the Transmitting Agent of Relapsing Fever in Panama by Human Experimentation, Am. J. Trop. Med. **1**: 183 (July) 1921.

1. Kahn, W.: Ueber die Dauer der Darmpassage im Säuglingsalter, Ztschr. f. Kinderh. **29**: 321 (July 21) 1921.

passage of contents of the bowel seems in general to be more rapid in the morning hours than in later periods of the day; likewise more rapid in breast fed than in artificially nourished infants. In contrast with the conditions recognized for adults, the infant exhibits a briefer retention of alimentary contents in the region of the lower bowel. Why there is less delay in the evacuation of the large intestine during infancy in contrast with adult life remains to be clearly explained.

CONFERENCE OF SECRETARIES OF CONSTITUENT STATE ASSOCIATIONS

The conference of the secretaries of the constituent state associations has become an established annual event in the activities of the American Medical Association. These meetings provide opportunities for an exchange of experiences and views and for mutual encouragement in carrying on the organization work in the various state associations and for correlating it with that of the national organization. The freedom of discussion and the spirit of cooperation which characterized the recent conference not only made evident the value of the activities in which the organization is now engaged, but also suggested fields of opportunity for the further development of the services that the organization may render to its members and to the public. The frank, constructive criticism of those who took part in the discussions was full of suggestions which must be reflected in benefits to the individual members. It is a significant fact, and it proves the value of the conference, that there was a full attendance at each of the meetings.

RECENT OBSERVATIONS ON SYPHILIS

Many physicians have been investigating the causes of toxic effects of arsphenamin and trying to lessen them. The practical value of changing the *dosis tolerata* to the *dosis curativa* can hardly be overestimated. Berman's [1] theory attributing the disagreeable reactions to a precipitation of serum globulins, which are usually increased in syphilis, is strongly opposed by other authors, most recently by Keiichi Tokuda [2] working in the Dermatologic Research Institute. Among other observations he has confirmed the relative increase in globulins, which occurs in certain stages of syphilis. Interesting changes of their amount take place during treatment, yet Tokuda holds to the opinion attributing the untoward effects either to technical errors in administration of the drug or to the presence of impurities supposed to be unavoidable and unrecognizable. Other authors, however, are more hopeful: Wiesenach [3] found that the tolerance for arsphenamin is increased threefold if injected in a 1 per cent. solution of sodium chlorid. He confirmed the good effect of divided doses on the toxic symptoms, giving one tenth of the intended dose one day before the remaining part. For clinical use, Wiesenach mentions the beneficial effects of an injection of 10 c.c. of a 10 per cent. solution of potassium acetate or citrate after the injection of arsphenamin. Though he does not investigate the possibility that the curative dose may be heightened by those methods together with the tolerated dose, there is reason to believe that a standard method may result from his experiments. The old question whether the failure to reinoculate with syphilis is due to the existing disease (Neisser) or to a state of immunity has been brought nearer its solution. Thus, Brown and Pearce,[4] working in the Rockefeller Institute on experimental syphilis, proved in one of their studies that the presence of the spirochete in the body does not prevent the formation of a typical chancre if reinoculated. In the second place, Eberson [5] confirms the seemingly opposite theories mentioned above, pointing out by analogies with other diseases that immunity is not incompatible with the life of a parasite, the real relation being a state of balance. This conclusion, which is hardly surprising now, shows how steadily scientific ideas are undergoing changes: the old conception practically gave the choice between infection or immunity. We have since noticed the relativity of both, and the term balance, which has been so well established in biology by the progress of physical chemistry, is the proper expression of modern views. The change is considerable; the new views are not far from denying active humoral immunity without coexistence of infection or its products. Even the long duration of immunity after some diseases cannot exclude this conception, for almost imperceptible traces of foreign proteins can cause immune phenomena, as shown in anaphylaxis.

1. Berman, Louis: The Nitritoid Crises After Arsphenamin Injections, Arch. Int. Med. **22**: 217 (Aug.) 1918.
2. Tokuda, Keiichi: Refractometric Studies in Human Syphilis, with Special Reference to Changes During Treatment with Arsphenamin and Neo-Arsphenamin, Arch. Dermat. & Syph. **4**: 512 (Oct.) 1921.
3. Wiesenach, H.: Weitere Versuche über die Herabsetzung der Salvarsantoxizität, Berl. klin. Wchnschr., July, 1921, p. 845.
4. Brown, W. H., and Pearce, Louise: Superinfection in Experimental Syphilis Following the Administration of Subcurative Doses of Arsphenamin or Neo-Arsphenamin, J. Exper. Med. **33**: 553 (May) 1921.
5. Eberson, Frederick: Spirocheticidal Properties of Serums in Latent and Experimental Syphilis, with Some Observations on Immunity, Arch. Dermat. & Syph. **4**: 490 (Oct.) 1921.

Association News

CONFERENCE OF SECRETARIES OF STATE ASSOCIATIONS

A conference of the secretaries of the constituent state associations was held at the headquarters of the American Medical Association, November 11 and 12. There were present the secretaries of the constituent associations of Alabama, California, Delaware, Idaho, Indiana, Iowa, Kansas, Kentucky, Maine, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Wisconsin and Wyoming. There were also present President Work, President-Elect de Schweinitz and the members of the board of trustees.

Dr. Hubert Work, President of the Association, in calling the conference to order, commented on the value of the conference in bringing the constituent associations into closer affiliation with the national body. Dr. Frank Billings, Chicago, addressed the conference on the past, present and future policies of the American Medical Association. The subject was discussed by Drs. Rock Sleyster, Wisconsin; D. E. Sullivan, New Hampshire; Edward Hines, South Carolina; L. B. McBrayer, North Carolina; Olin West, Tennessee; Horace J. Brown, Nevada; Mr. G. W. Winfrey, Virginia, and Dr. C. T. Selby, Ohio.

At the afternoon session, Dr. George E. de Schweinitz, President-Elect of the Association, presided. This meeting was devoted to a discussion of cooperation between the con-

stituent and component branches and the American Medical Association, opened by Drs. Alexander R. Craig, secretary of the Association, N. P. Colwell, secretary of the Council on Medical Education and Hospitals, and Frederick R. Green, secretary of the Council on Health and Public Instruction. A general discussion of the question then followed which was participated in by Drs. Holman Taylor, Texas; W. C. Musgrave, California; Edward Livingston Hunt, New York; W. G. Ricker, Vermont; Wendell C. Phillips, New York; E. J. Goodwin, Missouri; A. T. McCormack, Kentucky; L. B. McBrayer, North Carolina, and T. B. Throckmorton, Iowa.

The sessions continued throughout the day, adjournments being taken for luncheon and for dinner. At the dinner Dr. George H. Simmons presided, and addresses were made by Drs. A. R. Mitchell, Rock Sleyster, W. T. Williamson, Frederick C. Warnshuis, George E. de Schweinitz, W. A. Pusey, Frank Billings and Holman Taylor.

At the meeting held on the morning of the second day, November 12, Dr. Holman Taylor, secretary of the State Medical Association of Texas, presided. Dr. B. L. Bryant, Maine, presented the Maine Medical Association plan for coordinating health activities with the state association. This paper was then discussed along with the subject of the meeting: The Constituent State Medical Association Activities—(1) The Feasibility of Full-Time State Secretaries: (*a*) Reciprocal Financial Relationship Between the American Medical Association and the State Organizations; (*b*) Possibility of Grouping States into Districts to Secure Effective Cooperation in Legislative Work, etc. (2) Field Work in Cooperation with the American Medical Association: (*a*) The Councilor's Place in the Organization; (*b*) Study Courses in District and County Societies. This discussion was participated in by Drs. Holman Taylor, Olin West, A. T. McCormack, George E. de Schweinitz, N. P. Colwell, D. E. Sullivan, T. B. Throckmorton and L. B. McBrayer. A fuller report will appear later.

DR. BEVAN RECEIVES LEGION OF HONOR MEDAL

Honor Conferred in Recognition of War Work of American Medical Association

November 10, at Chicago, Dr. A. D. Bevan, as President of the American Medical Association during the war, received from the French government the Order of the Legion of Honor. More than 200 physicians assembled at a banquet to witness the conferring of this distinction.

Dr. Frank Billings, who presided, said that the honor conferred on Dr. Bevan was a recognition by the French government of the great service rendered by the American Medical Association.

ADDRESS OF DR. HERRICK

Dr. James B. Herrick, speaking on "The Debt of American Medicine to France," pointed out that France, if challenged, might well place the name of Pasteur and the list of his accomplishments against those of all American physicians. But besides Pasteur, many Frenchmen had achieved distinction in medicine. In a brief historical résumé, he summed up the achievements of such men as Magendie, Claude Bernard, Trousseau and Dieulafoy.

ADDRESS OF DR. WILBUR

Dr. Ray Lyman Wilbur, president of Leland Stanford Junior University and a member of the Council on Medical Education and Hospitals, pointed out that in his belief the work for the improvement of medical education was fundamental to the growth of medical science in America.

PRESENTATION OF THE MEDAL

Mr. Antonio Barthelemy, consul of France at Chicago, said that he felt particularly attached to the medical profession since during his own youth he had walked the wards with the great French surgeon Velpeau. France, he said, could never repay its great debt to America and particularly to the American medical profession for its assistance in the great war. In accordance with the French custom, Dr. Bevan arose. The Consul pinned on him the insignia of the legion, and kissed him on both cheeks.

ADDRESS OF DR. BEVAN

Dr. Bevan responded with a note of appreciation, saying that he accepted the insignia with a feeling that it was not so much an honor to him personally as a recognition by the French government of what the organized medical profession of the United States had accomplished in medical education and of the great service rendered by the Association during the war. He spoke of America's great debt to France, and paid tribute to the medical men and women of America who answered the call in 1917. Thirty-five thousand physicians had voluntarily enrolled in the service of the government. Dr. Bevan's father studied medicine in France from 1851 to 1853, and as a boy and as a medical student, his first impressions of medicine were obtained from his father's library, where the French medical books of Velpeau, Trousseau, Laënnec, Cruveilhier and others held the honored place. Dr. Bevan then traced the growth of American medical science. "In 1901," he said, "the medical profession of this country did a very wise and very important thing. It reorganized the American Medical Association on a democratic and representative basis, copying the scheme of organization of the United States government, and welding the entire profession of the country into a strong organization which has become an instrument with great possibilities for good both for the profession and the people. Medicine has become a science. It has become, like education, a great function of civilization.

"Simply stated, the great function of the organized medical profession of this country is to secure for all our people the great benefits of modern scientific medicine. The American Medical Association has dedicated itself to this task. Since its reorganization in 1901, it has made wonderful progress. It has in twenty years revolutionized medical education in this country, and placed it on as high and sound a plane as exists in any country of the world. It has through its Council on Pharmacy and Chemistry done much to place drug therapy on a more scientific basis. It has organized the medical men and women in every state and county into a democratic and representative medical organization of more than 80,000 members, which is in fact the organized medical profession of the country. Its journal, the organ of the Association, has become the largest and most influential medical journal in the world."

He then indicated our hopes for the future; the necessity for better plants, and for giving to every community the benefits of modern medicine. "Great as have been the accomplishments of the Association in the past," he said, "its future work will be greater. Remember that you are the American Medical Association; that the Association represents the best in American medicine. Your membership in the Association is of more importance to you than membership in any other medical body. To be a Fellow of the American Medical Association, if you fully realize your duties and responsibilities, is a greater honor, a greater privilege than any medical degree which can be conferred upon you."

His peroration was a dedication of himself to the medical profession and to faith in medical science. "As we grow older," he concluded, "we find that there are compensations which come with the marching years. There is a beauty in the sunset, a golden coloring in the autumn. A wider vision comes, a kindlier feeling toward the comrades who are marching with us along the same road, a great joy, a great pride in the young men we have trained; a keener appreciation of life with all its possibilities; a greater joy in living. We learn to overlook and forget the little things that once irritated and annoyed us. We learn that no one can injure us but ourselves. We learn the simple and wonderful lesson of the Golden Rule. We learn to recognize and bow down before the immutable laws of the universe. We are but atoms in a mighty scheme; but, small as we are, a part of it, and whether we will or not the good and the bad of our lives will live on. Scientists as we are, we learn from science the laws of life, the laws that men must follow for their own good. We learn that the physical law and the moral law are one. Define these things as you will, such knowledge means a religion. Let us make a confession of faith in life, in science, in the future, in our fellow men."

V. 7
1921

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hospital News.—The Cottage Hospital of Santa Barbara has recently been given $50,000 by Mrs. William H. Bliss, Santa Barbara. Mrs. Bliss specified that the money is to be used for the erection and equipment of two wings which are needed, one for the care of children and one for contagious diseases. The trustees have accepted the gift and work will begin immediately.

University of California Medical Directory.—A directory containing a list of all graduates of the medical school from 1864 to 1921, arranged by classes, has just been issued by the University of California. A local index indicates where the graduates of the school are now practicing. Sixteen of the graduates are practicing medicine in foreign countries, while 523 have remained in California.

Personal.—Dr. William Henry Bucker, Glendale, former medical director of the central division of the American Red Cross in Siberia, has been made superintendent of the Olive View Sanatorium, a county institution for tuberculous persons. ——Dr. John M. Hench, former major, M. C., U. S. Army, at the base hospitals Contrexéville and Gièvres, France, has been made medical examiner for the bureau of war risk insurance for the Stockton district.

Committee Appointed to Consider Drug Hospital.—In accordance with an act of the last legislature, Governor Stephens has appointed a committee to investigate the advisability of the establishment of a state isolation hospital for the care and cure of drug victims. The committee will report to the 1923 legislature. Physicians who will serve on the committee are: Dr. John A. Reilly, medical superintendent of the Patton State Hospital, and Dr. George E. Ebright, San Francisco, president of the state board of health.

Loan Fund for Medical Students.—A loan fund of $10,000 for the benefit of students in the Leland Stanford Junior University School of Medicine, San Francisco, has been established by Mrs. Sadie Dernham Patek, San Francisco, in memory of her husband, the late Dr. Robert Patek. Under the terms of the fund it is to be loaned to medical students to assist them in completing their medical course, and may be borrowed without interest for six years, after which a rate of 6 per cent. interest will be charged until the loan is repaid.

FLORIDA

Regulation of Automobile Camps.—As a result of poor municipal supervision, many of the touring automobile camps were condemned and abandoned last winter, and the board of health has announced that it will enforce strict sanitary regulations in these camps. The board cites as examples of well-conducted camps those at De Land, DeSota Park, Tampa, Palm Beach and Bradentown. The West Palm Beach ordinance defines the limits of the camp grounds; it creates an office of camp superintendent with police and managerial authority, requiring that all tourists desiring to enter the camp apply to the superintendent, giving name of person in charge of party, number of persons, and permanent home address, make and number of automobile, and length of stay in camp. A fee of 25 cents is charged for use of the camp, this sum to go to a fund provided for the special service rendered the tourists in camp.

GEORGIA

Personal.—Dr. Jarrett W. Palmer, Alley, was elected president of the state board of medical examiners, recently. Other officers elected are: Dr. Alfred F. White, Flovilla, first vice president; Dr. Obie B. Walker, Bowman, second vice president, and Dr. Charles T. Nolan, Marietta, secretary-treasurer.

ILLINOIS

Hospital News.—The cornerstone of the Macon County Tuberculosis Sanatorium, Decatur, was laid, October 20.—— The site for the new tuberculosis sanatorium at Madison has been purchased.

INDIANA

Negro Physician Found Guilty.—James Otway Puryear, a negro physician of Indianapolis, it is reported was found guilty, November 1, in the federal court, on the charge of violation of the Harrison Narcotic Law. Sentence was deferred.

Respite for Dr. Freshley.—It is reported that Dr. Frederick J. Freshley, Evansville, who was sentenced to serve two years in the federal prison at Leavenworth, Kan., following a conviction on a charge of violation of the Harrison Narcotic Law, has been permitted a short respite in which to dispose of his private affairs, on condition that he give a bond of $5,000.

IOWA

Radium Stolen.—Fifty milligrams of radium, valued at $6,000, disappeared from the Presbyterian Hospital, Waterloo, recently.

Laboratory in Child Psychology.—The Iowa child welfare research station at the state university, Iowa City, has organized a laboratory in child psychology for experimental work with children from 2 to 4 years of age. The laboratory is under the direction of Dr. Bird T. Baldwin, research professor in psychology, and Dr. Loreli Stecher, research assistant professor, with graduate student attendants. A new four-room building has been provided, and twenty-four children are now in attendance daily.

Orthopedic Clinic.—Dr. Arthur Steindler, professor of orthopedics in the State University of Iowa College of Medicine, Iowa City, demonstrated the work done in the care of crippled children and adults of the state at a clinic for orthopedic specialists, held at the university, November 11. Much of the work is done under the provisions of the Perkins and Haskell-Klaus laws which make it possible for children and adults to secure medical and surgical care at the expense of the state. The children's hospital was established at the university for the accommodation of the large number of children under 16 years of age who take advantage of the provisions of the Perkins law.

MARYLAND

Personal.—Dr. Walter L. Craig, Albany, N. Y., physician and engineer, has been appointed an assistant superintendent of the Johns Hopkins Hospital. The appointment fills the vacancy created by the resignation of Dr. Karl Van Norman. Dr. Craig will rank as second assistant superintendent, the position of first assistant going to Dr. Calvin Goddard, director of the dispensary.

Appropriation to Start Plague Division in Baltimore City Health Department.—An appropriation of $12,000 for the creation of a plague division at the Baltimore City Health Department has been allowed the health commissioner, Dr. C. Hampson Jones. The staff will consist of eight experienced rat catchers and a laboratory force. The division will have headquarters in the new morgue. The purpose of this division will be to put the health department in position to keep bubonic plague away from Baltimore.

Meetings.—The semiannual meeting of the Medical and Chirurgical Faculty of Maryland was held, November 9, at the University of Maryland, College Park. Luncheon was served at the college. The address of welcome was delivered by Dr. Henry B. McDonnell. Dr. Maurice Pincoffs, professor of medicine at the University of Maryland, spoke on the university extension course. Dr. William S. Gardner spoke on "Cancer of the Uterus," and Dr. Thomas S. Cullen gave a talk on cancer problems. Dr. Waitman S. Zinn spoke on "Esophagoscopy." Dr. Anton G. Rytina made an address on "Selected Anesthesia in Urology." Dr. Alan F. Woods, president of the University of Maryland, outlined the needs of the university and the present budget.——The regular lecture of the Johns Hopkins University School of Hygiene and Public Health was held, November 14, at the School of Hygiene and Public Health. Dr. Robert McCarrison, Lieut.-Col., Indian Medical Service, spoke on "Faulty Food in Relation to Gastro-Intestinal Disorders."

Campaign Against Tuberculosis.—According to the records of the state department of health, mortality from tuberculosis has decreased 41 per cent. in the last sixteen years in Maryland. The death rate from the disease is higher than for any other disease in the state. A danger signal is seen in the fact that the tuberculosis death rate among negroes is

roughly two and one-third times higher than for white persons. Because of the constant contact of the two races, officials consider correction of this condition vital to both. The figures explode a notion that tuberculosis is chiefly to be feared by persons under 40. They show that the toll of the disease is practically the same at all ages above 20. A somewhat higher rate is shown for men than for women, and is attributed to industrial employment, with exposure of the lungs to flint, steel, etc. Causes of the decline in tuberculosis mortality are given as:

Establishment of state sanatoriums, which effect cures in many early cases.

Reporting of cases to the state department of health, which furnishes unlimited prophylactic supplies.

Employment of visiting nurses, who show patients how to care for themselves and not menace the health of others.

Public education, emphasizing the essentials for combating tuberculosis — fresh air, good food and proper rest.

Improved living conditions, including sewage disposal, food inspection and water supply protection.

The high rate among colored people is ascribed to unhygienic living habits and personal habits.

MASSACHUSETTS

Conference on Tuberculosis Survey.—A conference was recently held at the Brockton board of health office to plan a survey of the tuberculosis situation in Plymouth County, and form a county organization to attend to the antituberculosis campaign. Dr. Fred J. Ripley, health officer of Brockton, was made president of the Brockton Anti-Tuberculosis Society.

Extension Courses of Harvard Graduate School.—The Worcester Extension Course of the Harvard Graduate School has arranged a fourth annual series of lectures for physicians in the City Hospital. Dr. John L. Morse, former professor of children's diseases, Harvard Medical School, opened the course with an address, November 16, and will be the speaker also on November 23 and 30 and December 14. Dr. Franklin White, Boston, will lecture on stomach diseases, December 7. The course is directed by Dr. Ernest Hunt.

Union Meeting of Medical Societies.—The Essex South, Essex North, Middlesex North and Middlesex East district medical societies held a meeting, November 2, at the Essex County Tuberculosis Sanatorium, Middleton. The meeting was held to bring before the members various educational and legislative measures of interest to all. The guests were: Dr. Eugene R. Kelly, commissioner of public health; Dr. Arthur K. Stone of the Massachusetts Medical Society, and Benjamin Loring Young, speaker of the Massachusetts house of representatives.

MICHIGAN

Osteopath Fined for Violation of Medical Practice Act.—It is reported that F. C. Martin, osteopath of Pontiac, was recently found guilty on a charge of administering medicine in violation of the state medical act. He was fined $75.

Personal.—Dr. Angus McLean, Detroit, who for two years during the war commanded Base Hospital Unit No. 17, at Dijon, France, has been made corps surgeon of the Sixteenth Army corps of the Sixth corps area, which has headquarters in Chicago.

Hospital News.—Highland Park General Hospital has announced the following reorganization of staff: Dr. Willard L. Quennell is retained as superintendent; Dr. George M. Livingstone was made chief of the medical staff; Dr. Chester A. Doty, chief of dermatology; Dr. William N. Braley, chief of pediatrics; Dr. Hubert E. Northrup, chief of obstetrics; Dr. Frank C. Witter, chief of surgery; Dr. William O. Merrill, chief of ophthalmology, and Dr. Plinn F. Morse, chief of the laboratory.

MISSOURI

Appointments at State Institution.—In accordance with promises that a woman physician will at an early date be named for each of the eleemosynary institutions of the state where women are admitted, Dr. Elizabeth Chaffee has been appointed assistant to Dr. Marion O. Biggs, chief of staff of the hospital for the insane at Fulton.

NEBRASKA

Cancer Meetings.—Lectures on cancer, under the auspices of the American Society for the Prevention of Cancer, were held in over forty counties in Nebraska with from one to eight meetings in each county, outside of Omaha and Lincoln. Sixteen medical societies held cancer meetings, discussing the various phases of the question. In Omaha thirty-two programs have been held in the churches, before business men's organizations, women's clubs, Y. W. C. A., Y. M. C. A. and Knights of Columbus. One physician made a trip of 150 miles in his aeroplane to deliver the "message of hope" at Imperial.

NEW JERSEY

Fined for Practicing Medicine Without Licenses.—An official report states that Lucia Renga Barbato, a licensed midwife, and Louisa Sarno recently pleaded guilty to charges of practicing medicine without licenses. Each was fined $200.

Smallpox Epidemic.—An epidemic of smallpox, which seems to be spreading throughout the county, is reported from Haddonfield. All schools, churches, Sunday schools and moving picture theaters have been closed and the public warned against holding social gatherings or public assemblies. The state board of health has ordered that every person in Haddonfield be vaccinated.

NEW YORK

Meeting of Labor Medical Board.—Members of the labor medical board committee, which was appointed at the suggestion of the state industrial commission, held a meeting, November 1, to discuss the problems concerning the medical care and treatment of injured employees. The testimony in the hearings included the following subjects: medical care and treatment of injured employees, including physical therapy; kind of medical evidence and manner of presenting it; method of selection of physicians and payment of medical expenses; hospital service and costs. Dr. Patrick H. Hourigan, president of the New York State Society of Industrial Medicine, and Mark A. Daly of the Associated Industries of Buffalo are members of the committee.

New York City

Joint Meeting of Pediatric Societies.—The annual meeting of the New England Pediatric Society, the Philadelphia Pediatric Society and the section of pediatrics of the New York Academy of Medicine will be held in New York City, December 3. Clinics will be held at various hospitals during the day, and there will be a dinner at the Hotel Pennsylvania in the evening.

Post-Graduate Hospital Memorial to War Workers.—The Post-Graduate Hospital, November 12, unveiled a memorial tablet dedicated to nurses and physicians who served in the war while attached to the Post-Graduate Hospital unit at Savenay, France. The tablet contains the names of the 380 physicians and nurses who made up the staff of the base hospital. Five names are distinguished by gold stars. Addresses were made by Col. Samuel L. Lloyd, director of base unit No. 8, and Miss Amy Patmore, who served as the unit's chief nurse.

Personal.—Dr. John J. Moorhead was recently decorated by General Robert Lee Bullard on Governors Island with the Distinguished Service Medal for his services as commanding officer of an evacuation hospital in France. He has already received the Croix de Guerre, the Medaille d'Honneur and a United States Army citation.——Dr. William C. Sandy, psychiatrist of the New York State Commission of Mental Defectives, has been appointed chief of the division of mental health of the new Department of Public Welfare of the State Advisory Board of Pennsylvania.——Dr. Smith Ely Jelliffe, New York, has just returned from a five months' trip to Europe.

Harlem Health Center Opened.—Governor Nathan L. Miller, Mayor John F. Hylan and Health Commissioner Royal S. Copeland formally opened the East Harlem Health Center, at No. 345 East 116th Street, November 10. This health center is a demonstration planned and financed by the New York County Chapter of the American Red Cross to show the increased efficiency of housing all health and welfare agencies in a given district under one roof. Twenty-one health, nursing, welfare and community organizations have combined to cooperate with the Red Cross in this new health center. At the opening exercises Dr. James Alexander Miller, chairman of the Health Center Council, presided. The speakers were Governor Miller; Miss Lilian D. Wald; Robert de Forest of the National Red Cross; Homer Folk of the

V. 7 1921

State Charities Aid Association and the local Red Cross, and Dr. Herman M. Biggs, state commissioner of health.

NORTH CAROLINA

Personal.—Dr. Alexander C. Bulla, Forsyth County health officer, has been made health officer of the city of Raleigh and Wake County, to succeed Dr. Everett F. Long, who has accepted the newly created position in the county health division of the state board of health. Dr. Long will have charge of the installation of new health departments in the counties.

OHIO

Unlicensed Practitioner Fined.—Samuel A. Dial, a negro, it is reported, was recently fined $200 and costs in the municipal court of Cincinnati for practicing medicine without a license.

Scarlet Fever Epidemic.—Of the twenty families in the village of Springville, all except three homes are under quarantine, and physicians and nurses have been sent from Tiffen to help care for the residents of the village. There are twenty-nine cases of the disease, and one death has already occurred.

Chiropractors Not Permitted to Sign Death Certificates.—A report states that, according to an opinion of the attorney general, chiropractors and other limited practitioners may not sign death certificates in this state. Osteopaths may sign such certificates, provided they have met the educational requirements set forth in the statutes.

Meeting of Academy of Medicine.—At a meeting of the Columbus Academy of Medicine, held October 31, Dr. William P. Lucas, head of the department of pediatrics, University of California, spoke on the "Psychology of Childhood." Dr. Lucas gave as one reason for the springing up of so many cults nowadays, that too many physicians are failing to apply psychology in their practice of medicine.

Bond for Fumigation Work.—As a result of the death of four persons from inhaling hydrocyanic acid gas which was being used to fumigate a restaurant under their apartment, an ordinance prohibiting an unlicensed person from using deadly gases for fumigation purposes and providing a substantial bond for fumigation operators has been prepared by the franchise commissioner and the health commissioner of Cleveland.

Health Board Moves to Check Smallpox Epidemic.—The health department of Fremont has ordered the closing of all public gatherings either indoors or outdoors until further notice, in order to check the smallpox epidemic in Fremont. Both public and parochial schools are closing for a period of three weeks, and all pupils and teachers in the schools must show a certificate of vaccination before they may resume school work.

Tribute to Dr. Oliver.—At the dinner given under the auspices of the faculty of the Medical College of Ohio, Cincinnati, on the occasion of the retirement of Dr. John C. Oliver as head of the surgical department of the University of Cincinnati, College of Medicine, and chief surgeon of the Cincinnati General Hospital, Dr. Martin H. Fisher, on behalf of the faculty of the medical college, presented Dr. Oliver with a large silver cigar container filled with cigars for his den. Dr. Henry Page, dean of the medical college, presented resolutions which the faculty had adopted in honor of Dr. Oliver. The principal addresses were made by Dr. Leonard Freeman, professor of surgery in the School of Medicine, University of Colorado; Dr. Herbert A. Royster, secretary of the Southern Surgical Society and president of the North Carolina Medical Association, and Dr. John U. Lloyd, Cincinnati.

Personal.—The office of Dr. Samuel B. Finney, aged 75, Delta, was recently invaded by four bandits who, after striking the doctor on the head with a revolver and binding him to a chair, robbed him of $29,000, his life's savings. Dr. Finney kept his savings in a pocketbook which he always carried.——Major Raymond W. Bliss, M. C., U. S. Army, Washington, D. C., is superintending the arrangement and equipment of the Elks' lodge building of Community Group Camp Sherman, which is to serve as a temporary hospital for Chillicothe Vocational School No. 1.——Dr. Henry Kennon Dunham has been appointed head of the department of tuberculosis at the University of Cincinnati College of Medicine, and director of the tuberculosis service of the Cincinnati General Hospital.——Dr. Henry M. Goodyear has been appointed as attending laryngologist at the General Hospital, Cincinnati.

PENNSYLVANIA

Contingent Bequest.—If there are no grandchildren of Mrs. Amos Hubbard, of Pottstown, living at the death of her daughter, one half of the estate is to be given to the Pottstown Hospital.

Clearing Office for Hospital Beds.—The Allegheny County Medical Society, at a recent meeting, passed a resolution urging that the city of Pittsburgh assume responsibility of obtaining immediate and proper hospital facilities for all sick and injured citizens who are unable to pay for hospital attendance. They also suggested the establishment in the department of public health of a clearing office for hospital beds available for charity patients.

Personal.—Dr. William C. Sandy, psychiatrist to the Commission of Mental Defectives of the State of New York, has been appointed by the state welfare commission at Harrisburg, as head of the division of mental health.——Dr. William E. Park, New Milford, has been notified by the U. S. Public Health Service of his appointment as attending specialist, and is assigned for duty at Pocono Pines, where a large hospital and vocational training school for disabled former service men is located in the heart of the Pocono Mountains.——Dr. Clarence G. Wilson is seriously ill at his home in St. Mary's.

Philadelphia

Result of Hospital Campaign.—The final report of the campaign of the American Stomach Hospital for funds to double its present capacity announced subscriptions amounting to $52,000.

Personal.—Dr. Wendell C. Phillips, New York City, addressed the section on otology and laryngology of the College of Physicians of Philadelphia, November 16, his subject being "Comments on Atypical Cases of Mastoid Involvement, with Suggestions as to Treatment." A film demonstration of the mastoid operation was made.

Base Hospital Unit Holds Yearly Reunion.—The third annual reunion of the Base Hospital No. 20 Association was held at the Ritz Carlton Hotel November 11. The organization is composed of physicians and nurses who were quartered at Chatel-Guyon for eighteen months during the war under command of Col. J. B. Carnett. The unit was organized at the University of Pennsylvania.

SOUTH CAROLINA

Chiropractor Fined.—It is reported that on October 3 D. Lyman Love, chiropractor of Charleston, was found guilty of practicing medicine without a license. He was sentenced to pay a fine of $200 or serve thirty days in jail.

TEXAS

Health Work in Mexican Homes.—The Taylor County Anti-Tuberculosis Association has employed the field secretary of the Texas Public Health Association for ten days' work among the Mexican population of Abilene. Lectures will be given in the Mexican schools each evening, and a thorough canvas made of Mexican homes in the interest of better health conditions.

Negro Unit of Tuberculosis Hospital.—The City Tuberculosis Hospital, Houston, opened the new negro unit, accommodating twenty patients, October 25, erected at a cost of $10,000 out of funds contributed by the city of Houston and Harris County. The unit will be under the personal direction of the hospital director, Dr. A. E. Greer, in cooperation with the clinic. A full quota of patients has already been admitted.

VERMONT

Election of Dr. Frederic W. Sears.—At the one hundred and eighth annual meeting of the Vermont State Medical Association, recently held at St. Albans, Dr. F. W. Sears, Burlington, was elected president. The other officers were announced in THE JOURNAL of November 5.

CANADA

Prescriptions for Liquor.—Only 10 per cent. of the physicians practicing in Manitoba issue their limit of 100 prescriptions for liquor. The records show that thirty-nine physicians used their allotment, and of the remainder, 590

issue only six prescriptions, and in some cases physicians have not exhausted their original pads.

Personal.—Dr. James A. Robertson, medical officer of health for Stratford, Ont., recently celebrated the completion of fifty years of practice in Stratford and vicinity.——Dr. James Coyne, St. Thomas, Ont., was recently elected president of the Ontario Registrars' Association, succeeding Dr. Raymond Reaume of Windsor, the retiring president.

Academy of Medicine, Toronto.—The new auditorium for the Academy of Medicine, Toronto, has been completed and was formally opened recently. The alterations and additions cost $25,000, and $23,000 has already been subscribed by members. The new auditorium is surmounted by spacious reading rooms, and subjacent cloak and comfort rooms.

University News.—The final meeting of the old University of Toronto Alumni Association and the first meeting of the new Alumni Federation of the University of Toronto were held recently for the purpose of reorganizing this body into a corporation with scope extended to include membership of the separate college alumni associations. The board of directors for the new association are Drs. George E. Wilson, George H. Locke and Angus McMurchy.

Public Health News.—Dr. Charles J. Hastings, medical officer of health, Toronto, in his monthly report presented recently to the board of health, states that the general mortality rate for the city, for 1921, continues low. Using for the first time the recently published assessment, population figures of 522,666, the rate for October is 9.8, and for the ten months, 11.3. Cancer and heart disease account for the largest number of deaths. Both of the typhoid deaths, and sixteen of the twenty-four cases reported, originated outside Toronto; the other communicable diseases are lower than usual for this time of year. Twelve cases of infantile paralysis were reported during October, with one death. The infant mortality rate continued the lowest yet recorded.

Hospital News.—The conjoint annual convention of the Alberta Hospital Association and the Alberta Association of Registered Nurses was held in the new medical building of the University of Alberta, Edmonton, recently. A number of interesting papers were read by prominent practitioners. ——The cornerstone of the new memorial wing of the Public General Hospital, Chatham, Ont., was laid recently by Dr. Tecumseh K. Holmes, a veteran surgeon of Kent County. The new building is of fireproof construction, and all modern services will be installed.——The cornerstone of the new Soldiers' Memorial Hospital, Orillia, Ont., was laid recently by the lieutenant-governor of Ontario. The hospital is being erected at a cost of more than $100,000 and is the gift of the citizens as a memorial to the soldiers of this community, who fell in the World War. The hospital will contain fifty beds.

GENERAL

Joint Resolution for Monument to Gorgas.—A Senate joint resolution by Senator Heflin of Alabama would authorize that $50,000 be spent in the erection of a monument in the city of Washington to Major-Gen. William C. Gorgas, former Surgeon-General of the Army, in commemoration of the services rendered by him to humanity.

Personal.—Dr. J. Hedley Scudder, Oakland, Calif., has been awarded the Order of the Rising Sun by the Japanese government in recognition of meritorious work accomplished in Siberia when acting as major in the U. S. Medical Corps. Dr. Scudder went into Sibera with the expeditionary forces in August, 1917, from the Philippine Islands, where he had lived for three years.

New Officers for Medical Society of the Southwest.—At the recent meeting of the Medical Association of the Southwest at Kansas City, Mo., Dr. Cloud Cooper, Fort Smith, Ark., was elected president to succeed Dr. Edward H. Skinner, Kansas City, Mo. The new vice presidents are: Dr. George Wilse Robinson, Kansas City; Dr. Alfred F. O'Donnell, Ellsworth, Kan.; Dr. Curtis R. Day, Oklahoma City, and Dr. Truman C. Terrell, Fort Worth, Texas. Dr. Frederick H. Clark, Omaha, was elected secretary-treasurer.

Status of Sheppard-Towner Bill.—The Sheppard-Towner bill for protection of maternity and infancy, already passed by the Senate, has been favorably reported by the House Interstate Commerce Committee. Chairman Winslow is now engaged in drafting the report of the committee. The bill authorizes an annual appropriation of $1,000,000 for five years, for use by the states and federal government in efforts to protect infants and mothers. An additional appropriation of $450,000 for starting the work is included in the bill.

Limit on Beer Prescriptions Set.—Notwithstanding the recent regulations for the prescribing of beer in unlimited quantities by physicians, Prohibition Commissioner Haynes has announced that the old maximum of 100 prescriptions every three months will remain in force. This attitude is based by Commissioner Haynes on the former regulations covering physicians' prescriptions which provide that no doctor shall issue more than 100 prescriptions every quarter, regardless of whether whisky, beer or wine or some other of these intoxicating remedies are given patients. November 18 has been set as the day on which the Senate will finally vote on the Willis-Campbell conference report prohibiting the sale of beer as a medicine. The measure has already passed both houses of Congress, and was held up in the Senate by an amendment prohibiting the search of private property without a warrant. The prohibition of medical beer is not involved in the issue before the Senate.

Red Cross Medical Supplies for Russia.—Medical supplies, including drugs, hospital supplies and equipment, and hospital clothing from Red Cross stock in Europe and the United States are being shipped to Soviet Russia, and by the end of the year Red Cross supplies valued at more than $1,750,000 will have been placed at the disposal of the American Relief Administration for use in the disease ravaged provinces. Dr Henry Beeuwkes, in a recent report to national headquarters, states that the present plans contemplate the supplying of existing hospitals and clinics with drugs and hospital supplies essential to their operation, the organization of clinics at food distributing centers in areas without medical facilities, and the inauguration of measures to prevent and combat diseases in areas in which they operate. In order to combat typhus, large numbers of baths and disinfecting units are being installed and controlled by American personnel and operated by the Russians. Installations will be simple and the cost low in comparison with the benefit they will render in areas badly infested and without bathing facilities.

Deductions for Contributions in Tax Bill.—In the final passage of the tax bill in the Senate, there are two provisions which are disappointing to those engaged in the work of raising money by gift or contribution for educational or hospital purposes. The Senate refused to acquiesce in the provision, as passed by the House, allowing deductions to corporations in their income tax for contributions or gifts. The House provision permitted a deduction of 5 per cent. of the net income of any corporation on account of such gifts. The authority to restore this text in the bill now rests with the conference committee. Many hospitals, colleges and organizations like the American Red Cross are expected to request the conference committee to retain the House provision in the final passage of the tax bill. While the tax bill grants no deduction whatever to a corporation for gifts or contributions, it does allow a deduction up to 15 per cent. of an individual taxpayer's net income, made as contributions or gifts. Educational and philanthropic workers endeavored to have this exemption increased to 25 per cent. These efforts, however, failed.

Gorgas Memorial Institute Elects.—The board of directors of the Gorgas Memorial Institute at the national headquarters in Washington elected the following officers: Drs. William C. Braisted, president; Franklin Martin, vice president; Arthur P. Robbins, Burlington, Iowa, executive secretary, and Mr. Edward J. Stellwagen, president of the Union Trust Company, Washington, treasurer. The purpose of the organization of an executive committee is to further a movement to introduce the sanitary methods devised by the late Surgeon-General Gorgas in all the civilized countries of the world. Word was recently received by the institute that Dr. Richard P. Strong, dean of the department of tropical medicine of Harvard University and former director of the biologic laboratory at Manila, has accepted the post of scientific director of the Gorgas Memorial Institute of Tropical and Preventive Medicine, to be built at Panama City on a site presented to the United States by Dr. Belisario Porras, president of the Republic of Panama. The presentation of the site was made recently in Philadelphia by Jose Lefevre, chargé d'affaires of Panama at Washington.

LATIN AMERICA

Women's Medical Association of the Philippine Islands.—This newly organized society is open to all women physicians practicing in the Philippine Islands. The president is Dr. Maria Paz Mendoza, with Dr. Felisa Nicolás, vice president, and Dr. Anastasia Villegas, secretary.

V. 7 1921

FOREIGN

Acta Radiologica.—This is the latest periodical to appear in the roentgenologic field. It is the official organ of the societies of Norway, Sweden, Denmark and Finland, and Dr. Gösta Forsell is the editor.

Physician Bequeaths Fund to City.—Dr. Ernst Asch of Frankfort a. M., Germany, has left his property, estimated at 1,700,000 marks, to the city of Frankfurt for a fund to be used for scientific or sociologic purposes or to promote art.

Prize for Research on Sexual Science.—The German Society for Sexual Science and Eugenics, of which Dr. H. Koerber, Meinekestrasse 7, Berlin, is secretary, announces that Dr. Placzek has given the funds for a prize of 2,000 marks to be awarded for the best work offered in competition on the subject of possible anatomic bases for homosexuality being congenital. Competition is restricted to Germans in Europe.

Abderhalden Fund.—It was mentioned on page 1348 that the Berzelius medal had been conferred on Abderhalden, and the *Medizinische Klinik* relates that the city of Halle has placed the sum of 100,000 marks at his disposal for scientific research in token of appreciation for his decision to stay in Halle when offered a chair in a Swiss university. He is publishing a "Handbuch der biologischen Arbeits-Methoden." Thirty-six parts have already been issued, each by a different research worker.

Treatment for Soldiers with Head Injuries.—A dispensary for this purpose has been organized at Berlin for medical aid and advice for ex-soldiers who had been wounded in the head, and who have not received sufficient treatment. They will be directed to the special school for training those with brain injuries, where medical and pedagogic courses are being given, or they will be treated in the dispensary, or be sent to the nervous diseases department of the Charité Hospital. The dispensary, at Luisenstrasse 14, is open from 12 to 2 Mondays and Thursdays, and is in charge of Dr. M. Liepmann and Dr. Loewy-Nattendorf.

Child Welfare Work in Austria.—The American Red Cross has taken over 100 welfare stations in Austria which were threatened with extinction, being under financial difficulties, and has guaranteed their support for one year. The Red Cross will make use of the stations already established, retaining their staffs where possible. The relief will include provisional rations for children under 4 years of age, cod liver oil for those children whose parents are unable to buy it, and clothing. In Lemberg, the capital of eastern Galicia (Poland) the child welfare work is already cared for by the American Red Cross medical unit stationed there.

Next International Congress for History of Medicine.—The topics appointed for discussion at the next international congress on the history of medicine are: (1) The principal foci of epidemic and endemic diseases of the middle ages in the Occident and the classic Orient, and (2) The history of anatomy. The congress is to be held at London on July 24-29, 1922. Professor Singer of Oxford to preside. The officers of the International Society for the History of Medicine are Giordano of Venice, Singer of Oxford, Jeanselme and Menetrier of Paris, with Tricot-Royer, president. Laignel-Lavastine is the secretary. His address is rue de Rome, 45, Paris.

Deaths in Other Countries

Dr. **G. von Merkel,** a leading clinician of Germany, residing at Nürnberg, aged 87. He was one of the founders of the German Internal Medicine Congress organization, and one of the editors of the *Münchener medizinische Wochenschrift* as well as of the *Deutsches Archiv für klinische Medizin.*——Dr. **M. Parpal** of Santa Fé, Argentina, a member of the legislature and authority on leprosy.——Dr. **A. L. Fønss,** a dermatologist of Copenhagen.——Dr. **E. Tachard** of Strasbourg, aged 77.——Dr. **Santos Junior,** physician to the Portuguese Hospital at Rio de Janeiro.

CORRECTION

Appointment at Cushman Hospital, Tacoma, Washington.—IN THE JOURNAL, October 29, the last personal item under Washington should have read: "Frederick L. Wright has been assigned to succeed Major William Edler, at the Cushman Hospital, Tacoma, who has been transferred to the U. S. Public Health Service in St. Louis." We were erroneously informed that Major Edler was succeeded by Dr. Herman S. Jedd.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 24, 1921.

Reduction of Insurance Physicians' Capitation Fee

At the annual conference of representatives of local medical panel committees, a long discussion took place on the government proposal to reduce the capitation fee (reported in a previous letter). The conference reaffirmed the opinion that $3.25 was the lowest capitation fee that should be offered for an effective service, and asserted that there was no justification for the demand that the arbitration award of $2.75 (now in force) should be reduced. But the conference recognized the force of the "appeal to citizenship" made by the minister of health to insurance physicians "to make some sacrifice for the common good in a great financial crisis," and was willing to urge physicians to respond to this patriotic appeal to any reasonable extent consistent with the interests of public health. It decided to ask the government to discuss with representatives of the profession the best means of carrying this into effect. The conference authorized the Insurance Acts Committee of the British Medical Association to consider with the government a rebate of 25 cents on the present capitation fee. It also resolved that the measure of success which has attended the experiment of providing medical benefit under the insurance acts should be allowed to work during a number of normal years with only such incidental improvements as experience proved necessary, before any reliable conclusions can be drawn as to their effect on the public health. A deputation from the conference waited on Sir Alfred Mond, minister of health, and laid before him the reply of the conference to his proposal. He declared himself unable to alter the capitation fee of $2.25 which he proposed when he received the previous deputation. He had then said that he was not bargaining, but laying down a final figure. He pressed strongly on the conference the need of coming to a decision, as the scrapping of the whole system of medical benefit was being urged. The taxpayer desired to be relieved of expenditure at almost any cost and in almost any manner. There was an outcry of a not uninfluential section, both lay and medical, attacking the panel system. Asked for a guarantee that the rate now proposed should last for three years, he said he could not do this but could give a guarantee for two years. The deputation reported to the conference, and after discussion it was decided by a large majority to accept the offer of the minister of health. A desire to help their country in the present serious financial position was one motive in agreeing to accept the offer. But the danger of the whole system being scrapped on refusal also played a part. Approximately $33,000,000 is paid annually to panel physicians. The value of so much fixed remuneration is relatively greater in the present time of financial stress, when remuneration and prices are falling on all sides.

Novelties in Medicine

In an inaugural address at the one hundred and eighty-fifth session of the Royal Medical Society of Edinburgh, Sir Dyce Duckworth said that a great many novelties had been brought out which had not been sufficiently tried. Young men were trying these new things, and their heads had not been properly filled with the things which were known to do good. He advocated the well-tried remedies. In the wild hurry of today it was not recognized that new methods required long and serious study. These novelties were mischievous in with-

drawing confidence from the old remedies, long approved by the skill and brains of our forefathers. Speaking of alcohol, he said that science had failed to aid the physician in prescribing it in any form of disease, but he would regard the total prohibition as distinctly hurtful to any Christian country. On the other hand, experiment had shown that no man in health could do his work better by taking whisky or beer during its progress. The evidence was that it diminished the output of energy, but an alcoholic beverage might be taken, if desired, in strictly moderate quantity when a man's work was done, and be a refreshment to his body.

Games for Girls

At the Medical Officers of Schools Association, Dr. A. E. S. Clow opened an important discussion on this subject. She thought that the time was past when it could be maintained that field games, such as cricket and hockey, were bad for girls, but there was still some dispute among educational authorities. The outdoor recreations within the reach of schoolgirls were walking, cycling, swimming, drilling and gymnastics, and games—cricket, tennis and rounders in summer, hockey, lacrosse and netball in winter. Cycling was good enough exercise for the legs, but gave no exercise to the abdominal muscles or arms. Walking was a good exercise, but should not be the only one, because the muscles of the back, abdomen, shoulders, arms and neck were only partially brought into play. She praised swimming as one of the most exhilarating of sports. Drilling and gymnastics were excellent in moderation, especially in the open air, but did not take the place of games. She had never seen any ill effects from gymnastics, and saw no reason why they should not be as beneficial to girls as to boys. The best games for schoolgirls were team games—cricket, hockey and lacrosse. The important part played by games in character building had been recognized for generations: girls stood in need of them just as much as boys.

Whether games had a detrimental effect, immediate or remote, on the reproductive organs was in dispute. Dr. Clow had made a special note of their effect on the menstrual function and found that a smaller proportion suffered from any menstrual disorder among those who played games than among those who did not, and that this small proportion was still further reduced if the usual exercise was continued throughout the menstrual period. She advised every girl to continue her warm bath and her games as usual during the period, if she felt so inclined. A great many who formerly suffered from various degrees of dysmenorrhea became free from it. Thus, those who consulted her for dysmenorrhea were usually elder girls reading for examinations, who in their zeal reduced the time for exercise. When they resumed their former daily exercise, their symptoms disappeared. As to the remote effect on pregnancy, childbirth and the child, she doubted whether there were any figures sufficiently large for general conclusions. But coincident with the growing popularity of athletics among girls there had been a diminution in the mortality of childbirth and in infantile mortality. Moreover, centuries had proved that generations of women who hunted had been the mothers of large and healthy families.

In the discussion, in which several women physicians who had medical charge of large schools for girls took part, there was general agreement with the views of Dr. Clow. Mrs. M. Scharlieb pointed out that nature had provided a gigantic experiment in India. The well-born Brahmin girl suffered from want of development of her moral nature and of her abdominal muscles, and suffered proportionately in labor. On the other hand, among the low-caste road makers, the women did hard work in the open air, and were able to return to work immediately after child bearing.

HELSINGFORS, FINLAND

(From Our Regular Correspondent)

Sept. 15, 1921.

Congress of Pathologists

The first congress of the northern pathologists was held, August 29 and 30, at the Karolinska Institute, Stockholm. After President Sundberg of Stockholm had greeted the fifty delegates, Fibiger of Copenhagen gave an account of his experimental production of tar cancer in white mice. A number of slides were demonstrated. American readers are probably familiar with his work, and thus know that Fibiger has succeeded to a larger extent than his predecessors Yamigawa, Ichikawa and Tsutsui in the experimental production of cancer. To what an extent these malignant looking, metastasis-forming, transplantable tumors really are identical with cancer in man remains to be solved.

Henschen of Stockholm demonstrated specimens of tumors grown in the ethmoid bones of horses. During the last few years this disease had assumed an epizootic character in Sweden and were included with diseases which the veterinary surgeon must report. Clinically, the disease started as an acute suppurative rhinitis, which became chronic and assumed a hemorrhagic nature. Later, several tumors became visible. The histologic examination of each growth shows a number of tumors of different character; side by side occur carcinoma, adenocarcinoma and papilloma. The multiple appearance of the tumor, its polymorphism, the clinical history and the presence of lymphoid cell infiltrations make one believe that the etiology may be an organized virus. No attempts to demonstrate this, nor any transplantation experiments have, however, succeded.

Castren of Helsingfors gave a description accompanied by lantern demonstration of the epithelioid and giant cells in human tuberculous tissue. During the last few years he has been examining the microcentra, reticular apparatus, and other structures in the above named cells. These different structures, which all can be visualized with the help of specially developed fixations and staining methods, form a peculiarly arranged system, with the microcentrum in their center. The fibroblasts present in the tuberculous tissue have a similar, though not quite so much differentiated structure.

Jervell of Christiania had continued examinations started by von Dungern and Hirschfeld in 1910 in regard to the iso-agglutinins and the corresponding receptors, and the agglutinogens A and B. The earlier authors had demonstrated that the presence of the receptors in the blood was a dominant character, while no receptors indicated a recessive character. Jervell has studied these questions in Norwegian families. He was able to confirm the earlier findings. In some cases a cleavage of the two receptors could occur, so that a child had only one or the other of them. On the other hand, both structures could occur in a child, when the parents had only one each. These findings could be of some bearing in legal medicine, especially in establishing the paternity. Thus, if in a child's blood a receptor could be demonstrated which was not present in the mother, it must be present in the father's blood.

De Besche of Christiania, through study of Walker's work on asthma, had become interested in this subject. In a series of twenty-three cases he tried several tests with horse serum, horsehair, and skin tests with his own modification of the ophthalmoreaction. The latter consists of rubbing the eye with a finger that has touched a horse. Fifty per cent. of the cases reacted positively to horse serum, 75 per cent. to the horsehair test, and 100 per cent. to the ophthalmoreaction; the degree of reaction varied from redness to edema. De Besche then succeeded in transmitting this anaphylactic

V. 7 1921

state to another human being. This he did by injecting intracutaneously one drop of serum from a horse asthmatic into the arm of a healthy man. Twenty-four hours later he injected some horse serum into the same place and now he got a strongly positive reaction, but only on this place. Control tests with normal serum and sodium chlorid were negative.

ARTERIOSCLEROSIS

On the next day the discussion concerned arteriosclerosis. Reuterwall of Stockholm gave an account of the historical development of the question. Kerppola of Helsingfors suggested this classification of the various forms: A, hypertrophic; B, alterative; C, combined. In the hypertrophic form, no degenerative processes occur. In the B group, degenerative processes alternate with hypertrophic processes. This group he subdivides into (1) the arteritic; (2) arteriotic (true toxins); (3) traumatic; (4) hypoplastic (congenital); (5) atrophic (senile), and (6) nutritional sclerosis. The last named is caused by nutritional disturbances, vasa vasorum being affected, and begins with degenerative processes in the media next to the intima. The etiology of this form is often syphilis, but it may also develop as a secondary process to the arteritic form. Harbitz of Christiania described cases of multiple arteritis and phlebitis on a rheumatic basis.

KIDNEY ARTERIES AND HIGH BLOOD PRESSURE

A. Wallgren of Finland, professor of pathologic anatomy, had undertaken to solve this problem by examining a series of kidneys from patients with high blood pressure. As control cases he had material from 190 successive postmortems. Of these, however, only fifty-one had normal kidneys. In these he finds some interesting changes in the kidney arteries. In the latter half of the first decade, intima proliferations of pure elastic or combined collagen and elastic type are already visible in the larger kidney arteries. These proliferations become more numerous with advancing years, and at 30 years similar changes can be seen in the finer arteries in the inner parts of the cortex. After 30 years there begins a more or less widespread reduction of the media musculature, usually associated with hypertrophy of the connective tissue element. The fine calibered arteries become more and more twisted. At still higher ages undoubtedly regressive processes in the elastic tissue appear. At 70 years hyalin (yellow with van Gieson's stain) can be seen beneath the endothelium of the vessels. Kidneys from forty-four cases of hypertension were now compared with these. Ten cases showed blood vessels conforming with these of the normal age group. Some of these were from persons having suffered from severe neuroses or undoubted endocrine disturbances. In the thirty-four remaining cases the typical picture of nephrosclerosis was found. The condition of the blood vessels in nephrosclerosis differs not in any qualitative but only in a quantitative respect from the changes seen in the normal development and aging. As thus in more than 20 per cent. of the high blood pressure cases there is no nephrosclerosis, high blood pressure can by classified in (1) hypertonia with nephrosclerosis and in (2) hypertonia without nephrosclerosis. That in the first group the sclerosis is primary and the rise in blood pressure secondary, Wallgren considers never to have been satisfactorily shown. On the contrary, he thinks it is probable that the sclerosis is secondary. He reached this conclusion from a study of the arterioles in other organs of thirty-two hypertonic and eighteen normal cases.

Kragh of Copenhagen seemed to have solved the problem of esophageal traction diverticula, a term which he proposes to change to tuberculous diverticula. In his studies of fifty-one cases of fully developed diverticula and fourteen instances of recent adhesions between lymph glands and the esophagus, found in postmortem examinations of 556 bodies, he always finds tuberculosis. The tuberculous process originates in the lymph glands, extends into the esophagus and causes a stricture and later perforation, through which the esophageal epithelium grows. Thus the diverticulum is formed.

Holsti of Helsingfors had examined a series of twenty pairs of tonsils, removed by operation from patients with various forms of arthritis. In nearly all of them he finds grave inflammatory processes, extending through the capsule; in the latter are thrombosed vessels regularly seen. The examinations are being continued.

BACTERIOLOGY

The last afternoon was taken up by papers on bacteriologic subjects. The type question in regard to meningococci and gonococci was discussed by Thomsen and by Vollmond of Copenhagen. It seems as if both these cocci could be subdivided into at least three types, as Cole has shown to be the case with the pneumococci.

BERLIN

(From Our Regular Correspondent)

Oct. 12, 1921.

Past Results and Future Prospects of Specific Tuberculosis Therapy

Professor Neufeld, director of the Berlin Institute for Infectious Diseases, one of the most eminent tuberculosis investigators of Germany, publishes in the *Zeitschrift für Tuberkulose* an excellent critical survey of the prospects of specific tuberculosis therapy. He claims to have established that Wright's opsonin hypothesis is entirely deficient in its theoretical basis, since Wright neglected to substantiate his theory by animal experimentation. All clinicians doubtless have become convinced that the treatment of tuberculosis by the Wright method secures no better results than the usual tuberculin treatment. As for the nature of tuberculin treatment, it was formerly regarded as self-evident that its action constituted an active immunization process; but, the fact is, it has only a striking external similarity to the methods of "acute" immunization, since, as a rule, the patient becomes very rapidly habituated to increased doses of the remedy. But all animal experimentation shows most conclusively that old tuberculin exerts no immunizing effect whatever. For this reason, Robert Koch tried to produce new tuberculin preparations from the body elements of tubercle bacilli, and further attempts have been made to use whole killed bacteria subcutaneously and intravenously to effect immunization. The new tuberculins, as well as the whole killed bacteria, show, indeed, in animal experimentation entirely different qualities than old tuberculin, which contains essentially only the soluble product of secretion. On healthy animals, they act as antigens; that is, by their aid, complement-binding antibodies, agglutinins and precipitins can be produced. Since Robert Koch was able to accomplish the same thing in tuberculous subjects by intravenous injection of good-sized doses, it was hoped that in such patients marked improvement would follow. But also these high-flown expectations were doomed to disappointment. The same result was observed also in the treatment of numerous cases of far advanced pulmonary tuberculosis with large doses of bacillary emulsion. With the new tuberculins, not only antibodies can be produced but also, in certain cases, hypersusceptibility and immunity; it is thus not correct to say, in principle, that neither can be brought about other than through treatment with living virus. But in all trials with the killed virus the effect was feeble and irregular. Nevertheless, the fairly good immunization

results that Momose attained in Kassel's laboratory with tubercle bacilli administered to guinea-pigs are worthy of note; but still more interesting are the results that he secured with the same preparations in the treatment of infected guinea-pigs. However, Momose himself is very cautious about drawing conclusions. Robert Koch, during his last years, treated tuberculous subjects with various antigens, sometimes subcutaneously and sometimes intravenously. Concerning these experiments Möllers and Jochmann (*Deutsche medizinische Wochenschrift*, 1910, No. 21, and 1912, No. 16) expressed themselves very reservedly. Neufeld stated that the experimental basis of the treatment with so-called partial antigens inaugurated by Deycke and Much is defective. In his opinion, adequate experimental proof is lacking that Much's preparations are superior to other tuberculins and that with their aid anything essentially different can be accomplished. He agrees with F. Klemperer that partial antigen therapy is probably only "tuberculin treatment with small and minimal doses." Neufeld does not expect much from von Hayek's views. Nor have the attempts to secure better results with the existing preparations by different modes of application (Spengler, Petruschky, Poundorf) accomplished anything worth while. The use of living, acid-fast cultures; that is, bacteria which, as regards their staining qualities, are closely allied to tubercle bacilli (Möllers, F. Klemperer, Dieudonné, Behring, Koch) has not satisfied the high expectations entertained by some. Concerning the theoretical basis of Friedmann's procedure, he expresses himself thus: "If, with this, we compare Friedmann's positive results, which are confined to experiments with three guinea-pigs, we are compelled to state that probably scarcely ever have such inadequate experiments been known to enjoy the honor of so much reinvestigation." Neufeld regards it as a fact that Friedmann (like so many others before and since) isolated some acid-fast cultures from cold-blooded animals and with these performed some immunization experiments, almost all of which resulted negatively, thus yielding much worse results than immunization with killed bacteria, which in themselves were modest enough. "The manner in which Friedmann reports his findings in this instance and on other occasions is in marked contrast with the customary methods employed by scientific investigators, and it is a very mild judgment if his method of reporting is referred to as extremely superficial." With regard to the technic of Friedmann's treatment, Neufeld emphasizes that one gets the impression that the application of the remedy required special experience and, if possible, special training. "On closer investigation it became evident that the doses of the remedy that were designated as 'weak' often contained more bacilli than those that were termed 'strong,' and when we clear away all the phantastic nonessentials and disclose the naked facts, there can be no doubt that the Friedmann treatment of tuberculosis follows more closely a fixed routine than has ever before been recommended in this disease." For the purpose of comparison I would refer to the statement of Geheimrat Kruse (Leipzig), the "chief comptroller of the Friedmann remedy," who, in a polemic discussion with Haberland, defends the purity of the Friedmann remedy (*Münchener medizinische Wochenschrift* **68**:1256 [Sept. 30] 1921): "All that has been brought out by the controversy over the Friedmann remedy is that (1) it can be wrongly used, and (2) along with a countless number of cases correctly and successfully treated there is here and there a case in which the disease, in spite of all treatment, can no longer be checked." Even genuine living tubercle bacilli, when their virulence has been weakened beyond a certain extent, no longer produce any noteworthy immunity (Kraus and Volk, Römer, Selter, Neufeld). Treatment with Marmorek serum has been discarded. "No one will maintain that the advocates of this serum displayed any weaker judgment than those who now, for example, report their success with the Friedmann remedy. In fact, the two remedies were favorably reported on by the same institutions; for example, the Kraus clinic." Neufeld emphasized that we have no prophylactic vaccination against tuberculosis that is applicable to man. Children inoculated by the Friedmann method may take tuberculosis and die just as well as those who are not inoculated. Hamburger's recommendation that young children be immunized by the subcutaneous injection of small quantities of living but attenuated human tubercle bacilli is rejected most vigorously by Neufeld. He also condemns injections of bovine bacilli applied to healthy children. Neufeld ends his valuable observations with the statement that in all attempts at immunization against tuberculosis a limit is set beyond which we cannot go: "Let us not forget that in all forms of immunization we are only imitating Nature, which causes antitoxins to appear in the blood of a diphtheria convalescent and bacteriolytic substances in the serum of a cholera patient. To one who has recovered from smallpox or measles, Nature grants an immunity that often lasts his whole life through, but to the patient who has recovered from tuberculosis she denies this boon. He who sets for himself the goal, as many investigators persist in doing, of an immunizing process in tuberculosis comparable with that of smallpox is looking for something that does not exist."

A Testamentary Provision

In a letter addressed to his successor, Professor Fick, Waldeyer stipulated that on his death, his brain, skull and hands should be bequeathed to the Berlin Anatomic Institute. He was influenced to take this action by the desire that anatomic investigations should frequently be conducted on persons who are well known, in order that certain questions may gradually be cleared up. In this connection, it may be mentioned that the brains of Helmholtz; the famous painter Adolph Menzel, and the eminent historian Mommsen were also subjected to an anatomic examination. A treatise on the subject was published several years ago by the late pathologist Professor von Hansemann.

Marriages

Robert Fridenberg Perez, Jr., New York City, to Miss Mary Willard White of Poughkeepsie, N. Y., September 18.

Theodore Senseman to Mrs. Laura Peters Youngman, both of Atlantic City, N. J., in New York City, November 4.

Leland Carson McIntosh, Henderson, N. C., to Miss Bessie Lee High of Campobello, S. C., November 3.

Joseph Winthrop Peabody to Miss Naomi Edelen Galloway, both of Washington, D. C., August 10.

William E. Musgrave to Mrs Florence Blyth Hinckly Moore, both of San Francisco, October 31.

D. Powell Johnson, Chicago, to Miss Ione Elizabeth Kneese of Muscatine, Iowa, October 25.

Wallace Edson Rose to Miss Alma Tayler, both of Kearney, Neb., at Omaha, September.

Aaron Billings Gates to Miss Anne Henshaw Glover, both of Greenwich, Conn., October 20.

Raymond P. Carroll, Laurel, Neb., to Miss Marie Helen Maney of Omaha, September 20.

Glen Elmo Peters to Miss Paula Nordhues, both of Randolph, Neb., September 20.

Frank G. Crandall to Miss Eleanor N. Anderson, both of Woodburn, Iowa, recently.

Deaths

Bingham Hiram Stone ✱ Burlington, Vt.; University of Vermont, Burlington, 1899; pathologist for the state of Vermont; director of the state laboratory of hygiene; professor of bacteriology and pathology, University of Vermont; died, October 27, from cerebral hemorrhage, at the Mary Fletcher Hospital, Burlington, aged 47.

Robert Thomas Irvine ✱ Ossining, N. Y.; McGill University, Montreal, 1885; physician to Sing Sing Prison, 1891-1908; since February connected with the War Risk Insurance Bureau, Washington, D. C.; former health officer of Ossining; died suddenly, November 1, from heart disease at Washington, D. C., aged 63.

William L. Garrison ✱ Toulon, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1890; Rush Medical College, Chicago, 1893; died, November 3, at the Francis Hospital, Kewanee, Ill., from injuries received when he fell from his office window in Toulon, aged 53.

J. Anson Smith ✱ Blackwood, N. J.; Jefferson Medical College, Philadelphia, 1897; superintendent of the Camden County Hospital for the Insane, Blackwood; died, October 27, following an operation for appendicitis, in the Cooper Hospital, Camden, aged 50.

George F. Merritt ✱ St. Peter, Minn.; Rush Medical College, Chicago, 1872; former president of the Minnesota Valley Medical Association; coroner for Nicollet County, and for many years city health officer; died, October 26, from chronic myocarditis, aged 74.

Herbert Woodworth Schwartz, Washington, D. C.; Syracuse University, College of Medicine, 1884; lived for many years in Japan, where he occupied the chair of physiology at the Tohoku Imperial University, Sendai, for five years; died, October 28, aged 62.

Bernice Barks Barr, Clinton, Mo.; Bellevue Hospital Medical College, New York City, 1880; member of the Missouri State Medical Association; former coroner of Henry County; died, October 31, from injuries sustained in an automobile accident, aged 64.

Jacob Henry Stewart, St. Paul; University of the City of New York, 1883; served in the Serbian army during the Russo-Serbian War; formerly on the staff of the Bellevue Hospital, New York City; died, October 28, from heart disease, aged 71.

Daniel Castillo, Graham, Va.; Medical College of Virginia, Richmond, 1916; member of the Medical Society of Virginia; died, October 22, at St. Luke's Hospital, Bluefield, from a bullet wound in the brain, presumably self-inflicted, aged 32.

Howard Davidson Harrison, Toronto, Ont.; University of Toronto, 1910; M.R.C.S. Eng., 1912; L.R.C.P. London, 1912; served during the late war on a troopship between India and Europe; died recently, from typhoid fever, aged 33.

J. Eugene Bingham, Elk Mound, Wis.; Milwaukee Medical College, 1905; died, October 23, from the effects of a gunshot wound, presumably self-inflicted, at the home of his brother at Sevastopol, Wis., aged 49.

Thomas Charles White, Jr. ✱ Bobo, Miss.; Jefferson Medical College, Philadelphia, 1900; former county physician; died, October 30, at the Ivy Hospital, West Point, Miss., after a long illness, aged 48.

Neafie Richardson, Philadelphia; Medico-Chirurgical College of Philadelphia, 1906; member of the Medical Society of the State of Pennsylvania; died, suddenly, October 30, from heart disease, aged 49.

William J. Taylor ✱ East Liverpool, Ohio; St. Louis College of Physicians and Surgeons, 1897; British veteran of the Boer war; died suddenly, October 30, from cerebral hemorrhage, aged 68.

Thomas Burnfield Henry, Northville, Mich.; Detroit College of Medicine and Surgery, 1897; served during the World War as major, M. C., U. S. Army, died, October 26, from uremia, aged 46.

D. Webster B. Kupp, Reading, Pa.; University of Pennsylvania, 1882; member of the board of pension examining surgeons since 1898; died, October 30, from cerebral hemorrhage, aged 64.

David P. Weaver, Avon, Ill.; Eclectic Medical Institute, Cincinnati, 1886; died, October 30, at the Galesburg Cottage Hospital, Galesburg, Ill., from pneumonia, following an operation, aged 72.

Bebee L. Van Winkle, Belpre, Ohio; Miami Medical College, Cincinnati, 1889; member of the Ohio State Medical Association; died, October 30, from cerebral hemorrhage, aged 59.

Ellwood Patrick ✱ Westchester, Pa.; University of Pennsylvania, Philadelphia, 1880; former president of the school board; died, October 30, from pulmonary congestion, aged 65.

Philip Rankin Koons, Mechanisburg, Pa.; Jefferson Medical College, Philadelphia, 1879; member of the Medical Society of the State of Pennsylvania; died, October 30.

Charles T. McClintock, Sarasota, Fla.; University of Michigan, Ann Arbor, 1894; member of the Medical Society of Virginia; died, October 22, at Jacksonville, aged 61.

Frederick J. Munn, Toronto, Ont.; University of Toronto, 1906; major, R. A., M. C.; died, September 11, from typhoid fever in the Wellesley Hospital, Toronto, aged 39.

James Campbell Andrews, Philadelphia; Eclectic Medical College, Cincinnati, 1868; died, November 2, at the home of his stepdaughter, from paresis, aged 84.

Eli Spear Jones, Gadsden, Ala.; University of Alabama, Mobile, 1883; member of the Medical Association of the State of Alabama; died, October 29.

Eben Jeremiah Russ ✱ St. Mary's, Pa.; National Medical College, Washington, D. C., 1861; died, November 13, from myocardial insufficiency, aged 81.

Isa A. Eberhart, Chicago; Bennett Medical College, Chicago, 1889; also a lawyer; died, October 29, at Riverside, Mich., from senility, aged 87.

Richmond Thompson Story, Burley, Ida.; Missouri Medical College, St. Louis, 1887; died recently in California, following an operation, aged 61.

George W. Bradley, Waverley, Ill.; Louisville (Ky.) Medical College, 1871; practitioner for fifty years in Waverley; died, November 1, aged 83.

Emanuel R. Hershey, Lancaster, Pa.; Jefferson Medical College, Philadelphia, 1880; also a dentist; died recently, at Marietta, Pa., aged 74.

Seth S. McKay, Johnson City, Tenn.; Meharry Medical College, Nashville, 1899; died, October 15, from cerebral hemorrhage, aged 58.

William Wallace Carey, Cuyahoga Falls, Ohio; Eclectic Medical Institute, Cincinnati, 1903; died, November 6, in New York City, aged 56.

Edna May Cowling Robertson, Toronto, Ont.; University of Toronto, 1914; died, September 15, at Wellesley Hospital, Toronto, aged 34.

James Alexander Agnew, Ethelsville, Ala.; University of Alabama, Mobile, 1874; died, October 11, from cerebral hemorrhage, aged 70.

Joseph G. Pettitt, Fannin, Texas (license, Texas, 1885); veteran of the Civil War; died, October 17, after a lingering illness, aged 70.

Thomas J. Potter, Smithville, Tenn.; University of Nashville, 1900; died, October 23, from cerebral hemorrhage, aged 60.

Daniel S. Palmer, Holdrege, Neb.; Eclectic Medical College, Cincinnati, 1890; died, October 25, from chronic nephritis.

Marquis L. McAlilly, Hutchinson, Kan.; Missouri Medical College, St. Louis, 1880; died, October 30, at Cloverdale, aged 69.

Phillippe Edmund Mount, Montreal, Canada; Montreal School of Medicine and Surgery, 1865; died, August 21, aged 81.

David W. Vest, Dallas, Texas; University of Alabama, Mobile, 1891; died, October 31, in a local sanatorium, aged 62.

John Rundstrom, St. Peter, Minn.; Central Medical College of St. Joseph, Mo., 1895; died, October 24, aged 86.

Robert A. Barnes, Marion, Ind.; Curtis Physio-Medical Institute, Marion, 1885; died, October 30, aged 81.

Bascom Lynn, San Antonio, Texas; Kentucky School of Medicine, Louisville, 1898, died recently, aged 57.

William Joseph Brady, Brooklyn; University of the City of New York, 1892; died, October 19, aged 56.

Edgar E. Isenberg, Manhattan, Kan.; Barnes Medical College, St. Louis, 1899; died, October 22, aged 52.

✱ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

SELENI-BASCCA

The Cosmopolitan Cancer Research Society, Basic Chemical Corporation, Etc.

In the issue of September 3 THE JOURNAL called attention to a campaign of free publicity that was being instituted by a Brooklyn concern that, apparently, had for sale an alleged remedy for cancer. The press-agent material was of two kinds—for medical journals and for newspapers. That which went to the medical journals was sent out on the stationery of the "Medical News Bureau," 77 Seventh Ave., Brooklyn. The "manager" of the bureau was given as D. E. Woolley. The items sent out to medical journals stated that the "Basic Cancer Research" had been organized to develop a treatment of cancer by the use of selenium and tellurium.

The material received by newspapers was sent out by the "Cosmopolitan Cancer Research Society," 847 Union St., Brooklyn (the same address as the "Basic Cancer Research"). The "Secretary" of the "Cosmopolitan Cancer Research" was D. E. Woolley!

The name of one "Dr. Frederick Klein" loomed large in the matter sent out by the "Cosmopolitan Cancer Research Society." Klein, we were told, is "the eminent authority on urinology and the chemistry of cancer." THE JOURNAL called attention to the fact that Frederick Klein's name was not unknown in the Propaganda files, as he was the gentleman who manufactured "Sulfo-Selene," a product that was widely heralded in the newspapers in 1916 as a remedy for cancer. It was also brought out that Klein, who is not a physician, claims to have evolved certain remarkable urinary diagnostic tests whereby the presence of cancer, syphilis, etc., may be determined.

More than a month after the publication of THE JOURNAL'S article, a letter was received (October 8) from Frederick Klein. To quote literally from part of the letter:

> "In the above JOURNAL dated Sept. 3th, Vol. 77, on page 805, regarding the 'Cosmopolitan Cancer Research Society' you have amongst others, mentioned my name Dr. Frederick Klein.
>
> "I wish to inform you that I have given my legal adviser the order to write a note to the above Cosmopolitan Cancer Research Society, 847 Union St., Brooklyn, forbidden them to the effect that my name *should not* be used by above society in any form or writting in any of their transactions, this has been done some time ago to prevent unethical conceptions concerning myself."

Shortly after the article of September 3 another item appeared in the newspapers throughout the country to the effect that the Cancer Research Society was offering a "$100,000 Cancer Prize" for a "medicinal cure for cancer." Many of the newspapers of the country seemed to bite on this piece of free publicity. This was in the first week of October. In the third week of the same month a Brooklyn paper announced that 3,000 people had submitted formulas for curing cancer to the Cosmopolitan Cancer Research Society. The article containing this announcement gave interesting descriptions of some of the "cures" submitted and closed with the statement that the Cosmopolitan Cancer Research Society was establishing "clinics" in various cities. It ended with the statement:

> "All treatments are confidential. In this respect the society had the cooperation of the Brooklyn Bureau of Charities. It also has the cooperation of the American Medical Association."

The closing sentence is, of course, unequivocally false.

At the time of THE JOURNAL'S article the name of the particular preparation which the Basic Chemical Corporation of America was putting out was unknown. Shortly after the article appeared it was learned that the product was on the market as "Seleni-Bascca." A physician, himself a sufferer from carcinoma, after reading the article of September 3, sent THE JOURNAL some correspondence he had received from the Cosmopolitan Cancer Research Society regarding the alleged cure. One piece was a letter signed "F. W. Humphrey, Acting Director; Dictated by Dr. George D. Barney," which read in part:

> "Our claim is a very simple one indeed, namely that the use of a proper preparation of Selenium (Seleni-Bascca) restores the Sulphur metabolism to normal; we claim that cancer cannot exist in any form, when the Sulphur metabolism is normal, the results from the proper use of Seleni-Bascca in cases of Carcinoma are quick and lasting, the Medical Profession can hardly realize that in this modest treatment a remedy for the Dreaded Carcinoma has been discovered.
>
> "Seleni-Bascca in it's colloidal form is quickly taken up by the blood stream, reaches the finest tissues and almost immediately resists the further growth of the disease. The research work has been going on since 1901, under the direction of Dr. Frederick Klein, in connection with Medical Men who have proved to their own satisfaction that Seleni-Bascca should be used as a treatment in every case of malignancy."

Seleni-Bascca comes in small vials containing fifty tablets. Each vial bears a label reading:

> "*SELENIBASCCA.* A mixture of Colloidal Selenium in tablet form. Recommended in the internal treatment of Carcinoma and some other cases of faulty metabolism."

Some of the preparation was turned over to the A. M. A. Chemical Laboratory with the request that the tablets be examined to determine whether or not they contained, as claimed, selenium in colloidal form. The laboratory report follows:

CHEMICAL REPORT

"An original vial of 'Seleni-Bascca' (Basic Chemical Corporation of America) was examined in the A. M. A. Chemical Laboratory to determine whether or not the substance contained colloidal selenium. The bottle contained 50 tablets weighing approximately 0.1 gm. (about 1½ gr.) each. The major portion of the tablet was soluble in hot water. Qualitative tests indicated the presence of chlorid, sulphate, small amount of nitrate, potassium, sodium, starch, talc and selenium. Tellurium was not found to be present. The ash was equivalent to 5.5 per cent.; over one-half of the ash consisted of a talc-like substance. The amount of selenium present in the specimen examined was only about 1.3 per cent.

"In the literature sent out by The Basic Chemical Corporation, 'Dr. Frederick Klein' is mentioned as chemist. Several years ago, the Council on Pharmacy and Chemistry investigated 'Sulfo-Selene,' a cancer remedy, with which the same 'Dr. Klein' was connected. The alleged composition of 'Sulfo-Selene,' as given to the Council, was:

"Selenium	.25
"Sulphur (partially in colloidal and partially in crystalloid state)	.10
"Potassium carbonate	.10
"Nitrogen	.05
"Bile Salts	.50
"To which is added an inert base or vehicle; as sugar of milk or amylum."	

"It was claimed that 'Sulfo-Selene' was prepared by reducing nitro-selenious acid with sulphurous acid, neutralizing with potassium bicarbonate and then adding bile salts. Assuming that the composition claimed for 'Sulfo-Selene' was correct the analysis of 'Seleni-Bascca' shows that the two products resemble each other. The tests, however, failed to reveal in 'Seleni-Bascca' the presence of the bile salts claimed to have been present in 'Sulfo-Selene.'"

"The product is not colloidal as claimed as the selenium can be removed by ordinary filtration."

Use of Natural Forces.—A larger, more wholesome and more permanent service would be rendered the individual and the community by insistently inculcating the doctrine, and following it to execution, of more active participation in the physical labor of the household; of more frequent open air recreations which develop the muscular system, stimulate pride in physical accomplishments; or, better still, where possible, the cultivation of growing things—flowers, shrubs, fruits, vegetables, etc. More difficult is the execution of such a program than the writing of a prescription. On the part of the physician is required the art of persuasion and generalship; on the part of the patient is demanded unwavering faith in the wisdom and sincerity of the medical commander and a firm determination to see the thing through to a successful finish.—F. B. Wynn, *Nation's Health* **3**:589 (Nov. 15) 1921.

V. 7
1921

Correspondence

CORNELL UNIVERSITY PAY CLINICS

To the Editor:—I am enclosing a clipping from the New York *Times*, October 24, which announces the opening of a new clinic, November 1, at Cornell University Medical College in New York City.

Have our medical ethics been revised?

The ethics of the connection of physicians with a commercialized university clinic may be seriously questioned. Pay clinics differ in no particular from group clinics of private practitioners with whom they are going to compete.

That Cornell University, as a private corporation, has a right to break all tradition and enter the field of commercialized practice of medicine is undeniable. But it should in all fairness so state and not do so under the name of social welfare. The graded prices which it announces for the different features of its examinations and treatment would net any private group of individuals that chanced to make investment in such an institution, with physicians working gratis or at minimum gratuities, a very handsome profit.

One notes from the clipping that private physicians are invited to refer cases for diagnosis to those pay clinics. The same request is extended to general practitioners by private group clinics. It seems to me that every physician should resent such a request, no matter where it comes from, because it carries with it an insinuation that the individual physician is deficient in diagnostic skill. When special emergencies arise in diagnosis, we usually know how to meet them without group clinics. Such cases are not at all frequent. Our great masters in medicine did not come from group clinics. I think it is an insult to the intelligence and credulity of the private practitioner to ask him to refer his cases to the Cornell pay clinics or those of private groups. Rather should we insist on an improvement in our teaching methods.

My dear Editor! I dread to contemplate further the effect on the profession that the plan of the pay clinic will have, especially if other Class A medical colleges follow this example.

The present high standard of the medical profession in the United States is due solely to the high code of ethics of the American Medical Association and the high ideals which the practitioner has absorbed during the course of his studies in a first class institution. This high standard has prevailed in spite of great competition which is encountered from graduates of second-rate schools, cults and spurious sciences. Will it withstand the competition of Cornell?

Since that university intends to commercialize the practice of medicine, selling so little for so much, or so much for so little, the public will in its own turn put a value on medical services according to standards which generally prevail in the trades. There the value of an article is determined according to the law of supply and demand; medical service will then obey the same law of economics where the average price of an article is determined by the lowest of price of that class of article. If the galaxy of Cornell "best doctors" serve in a clinic which advertises a dollar a call for *personal* service, according to the clipping, how low will the remuneration of the average physician be?

Even in Soviet Russia the physician's comforts and living standards are recognized as higher than those of tradespeople and the Red soldiers; in the United States it is bound to be the reverse if the plan of Cornell should prevail. With a lowered standard of living for physicians, one would certainly not expect a high standard of ethics to prevail.

As a service to the public, the pay clinic of Cornell will in no way replace the benefits which are derived from a self-respecting profession, because in acute diseases which usually produce the chronic sufferers who will later visit the pay clinic, the general practitioner is the first line of defense. He usually diagnoses promptly, treats with skill, and prevents complications and their sequels. Will he remain as efficient or become more so in the face of the newly created competition of a medical college?

NICHOLAS LUKIN, M.D., New York.

[NOTE.—A communication from Cornell University has been received outlining the plan, too late, however, for inclusion in THE JOURNAL this week.—ED.]

"MELLON ISSUES BEER REGULATIONS"

To the Editor:—I want to protest against your editorial of October 29 anent beer regulations. Why join the general hysteria? You have not, I am sure, much fault to find with the way physicians have acted with regard to the narcotics. Do you imagine we shall all be damned by the ability to prescribe beer? The subject did not deserve two lines—but you gave a column and over.

I am one who has not taken out a license to dispense alcohol, but my action is based not so much on acquiescence in the dictum that I do not need it in my practice—quite to the contrary, I feel that I often do—but upon the broad policy that when one is parked with a bunch of lunatics one had best make oneself as agreeable as possible until reason returns to them.

I feel that THE JOURNAL ought to stay out of it.

EDWIN DAVIS, M.D., Fort Worth, Texas.

To the Editor:—At a meeting of the Washington County Medical Society held, November 9, at Washington, Pa., the following resolution was unanimously adopted:

WHEREAS, We, the Washington County Medical Society of the State of Pennsylvania, do not believe that beer is necessary as a medicine and the organized liquor traffic of our country has ever been and is now willing to sacrifice any individual organization to gain its own selfish ends; and, further, that they are trying to make null and void the judgment and vote of forty-five out of the forty-eight states and that they are trying to accomplish this by dragging our profession into it; therefore, be it

Resolved, First, that we most vehemently protest against such action by the organized liquor traffic; second, that copies of this resolution be sent to the United States Senate and to the House of Representatives immediately; third, that this resolution be published in the daily papers, in the *Pennsylvania Medical Journal* and in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

C. C. CRACRAFT, M.D., Claysville, Pa.
Secretary-Treasurer, Washington
County Medical Society.

"IS CATALASE A MEASURE OF METABOLIC ACTIVITY?"

To the Editor:—Under "Current Comment" (THE JOURNAL, Oct. 15, 1921, p. 1259) you cite Morgulis' work as apparently establishing the nonrelationship of catalase and activity. I cannot refrain from calling your attention to the fact that proofs were offered by work done in this department showing that catalase bore no relation to metabolic activity. Such results were published more than a year previous to the appearance of the article by Morgulis.

R. J. SEYMOUR, M.D., Columbus, Ohio.
Assistant Professor of Physiology and
Anatomy, Ohio State University.

[COMMENT.—In our recent comment on a subject which now scarcely requires extended criticism and which we hope has finally been disposed of in a convincing way, we merely referred to Morgulis as "the newest critic" of Burge's theory

of the parallelism of the catalase content of tissues and their metabolic activity. If it will help to bring final conviction, we gladly add our correspondent's conclusion from his investigations at the Department of Physiology, Physiological Chemistry and Pharmacology in the Ohio State University. Seymour noted (The Relation of Catalase to Heart Activity, *American Journal of Physiology* **51**:525 [April] 1920) that: "Quantitative determinations by Burge's method of catalase in the ventricular muscle of turtle hearts give no evidence that there is any close relationship between the activity of the heart and the amount of catalase present. Hearts with a rapid rate as the result of warming varied both plus and minus, as compared to controls, in catalase content, the greater number showing less catalase."—Ed.]

"DR. PEPYS' DIARY"

To the Editor:—Please extend my thanks to "Dr. Pepys," not only for his quaint and humorous diary, but also for fairly compelling at least one more to read the original "Diary."

I wonder how many there are in the class who are familiar with any record of a trephine operation as old as the following. It will doubtless be of interest to many, at any rate. And will some of the wise ones, if they can, shed any additional light from contemporaneous medical sources on the diagnosis?

16th Jan. 1667. Prince Rupert, I hear, is very ill; yesterday given over, but better to-day. 2nd Feb. (Lord's Day). To White Hall, and there to Sir W. Coventry's chamber, and there staid till he was ready, talking, and, among other things, of the Prince's being trepanned, which was in doing just as we passed through the Stone Gallery, we asking at the door of his lodgings, and were told so. We are full of wishes for the good success; though I dare say but few do really concern ourselves for him in our hearts. With others in the House, and there hear that the work is done to the Prince in a few minutes without any pain at all to him, he not knowing it when it was done. It was performed by Moulins. Having cut the outward table, as they call it, they find the inner all corrupted, so as it come out without any force; and their fear is that the whole inside of his head is corrupted like that, which do yet make them afraid of him; but no ill accident appeared in the doing of the thing, but all with all imaginable success, as Sir Alexander Frazier did tell me himself, I asking him, who is very kind to me. 5th Feb. Heard this morning that the Prince is much better, and hath good rest. 6th. To Westminster Hall, and walked up and down, and hear that the Prince do still rest well by day and night, and out of pain; so as great hopes are conceived of him: though I did meet Dr. Clerke and Mr. Pierce, and they do say they believe he will not recover it, they supposing that his whole head within is eaten by this corruption, which appeared in this piece of the inner table. 11th. . . . hear that Prince Rupert is still better and better. 13th. The Prince, I hear, is every day better and better. 3d April. This day I saw Prince Rupert abroad in the Vane-room, pretty well as he used to be, and looks as well, only something appears to be under his periwigg on the crown of his head.

E. L. Kniskern, M.D., Muskegon, Mich.

CARE OF HYPODERMIC NEEDLES

To the Editor:—I have a method of taking care of hypodermic needles which I find most satisfactory. I clean the needle carefully after using, and wrap the point tightly with a tuft of cotton. I grasp by the cotton-wrapped point and shake out all the water. The cotton will absorb all remaining moisture and there will be no rusting. I have used a 25 gage needle, taken care of in this way, daily for months, and have had no trouble whatever with plugging of the needle.

Gottlieb Werley, M.D., El Paso, Texas.

"USE OF HOLLOW TUBE FOLLOWING SUBMUCOUS RESECTION OF THE NASAL SEPTUM"

To the Editor:—Dr. H. M. Goodyear, in his article on the use of hollow tubes following submucous resection (The Journal, Oct. 1, 1921, p. 1103) said: "The use of the tube is so simple and yet so revolutionizes the after-treatment of submucous resection that one wonders it has not been described before." Professor G. Alexander of Vienna described this method fifteen years ago, and is still using it. He applies two or three hollow tubes one on top of the other, thus avoiding entirely gauze packing and giving the patient absolute freedom of breath.

Otto Glogau, M.D., New York.

"CANCER AND ITS NON-SURGICAL TREATMENT"

To the Editor:—In a criticism of Dr. L. Duncan Bulkley's book, "Cancer and Its Non-Surgical Treatment" (The Journal, Oct. 8, 1921, p. 1201), the following statement is made: "It is a pity that such medical heresy should be advanced by a member of the American Association for Cancer Research, especially since it will counteract the splendid work which that association is trying to do."

The undersigned members of the Council of the American Association for Cancer Research beg to state that the association, like other medical societies, assumes no responsibility for the views of its members. Furthermore, at its meeting in Cleveland, March 24, 1921, a paper by Dr. Bulkley was severely criticized by several members of the association. Nor was a single voice heard in defense of Dr. Bulkley's views.

James B. Murphy, M.D., President,
Willy Meyer, M.D., Vice President,
Robert B. Greenough, M.D.,
H. Gideon Wells, M.D.,
F. C. Wood, M.D.,
William H. Woglom, M.D., Secretary.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF HYPERTROPHY OF TURBINATES IN CHILDHOOD

To the Editor:—In my work on the nose and throat, I run across many cases like the following: A child of anywhere from 5 to 8 or 9 years old who has its tonsils and adenoids removed comes in complaining of nasal obstruction. An examination discloses no tonsils or adenoids but the inferior turbinates puffy so that the nasal passage is obstructed. What can be done for these patients? I do not suppose the inferior turbinates should be touched with a cautery or knife, but do not know just what should be done. If you can give me any information as to the best way to treat these cases it will be greatly appreciated.

F. B. Bogardus, M.D., Kalispell, Mont.

Answer.—Two possible conditions present themselves based on the description given by our correspondent: First, a simple hypertrophy of the turbinates in which there is no excessive secretion and a normal mucous membrane. This condition is usually treated by "infracture," which is the fracturing downward and laterally of the projecting mass. The procedure produces relief until the child's age permits more radical action. Second, cases of "perennial hay-fever" which show a hyperplastic enlargement, pallor, excessive mucus secretion, sneezing, etc. This condition occurs in eczematous diathesis and protein intoxications. The cases are difficult to diagnose definitely and require, as diagnostic aids, the Wassermann test, determination of the blood sugar, skin tests with food proteins, epidermal proteins (such as horse and dog dandruff, and chicken feathers) and finally, bacterial proteins. The treatment consists of eliminating the offending substance from diet and environment.

MIDOL

To the Editor:—Will you please advise me through the Queries and Minor Notes column of The Journal as to the ingredients of Midol headache tablets?

N. L. Hawkins, M.D., Watertown, N. Y.

Answer.—Midol was analyzed in the A. M. A. Chemical Laboratory in 1912. At that time the chemists reported that Midol was sold in the form of white tablets each weighing,

V. 7 1921

on an average, about 6½ grains (0.4324 gm.). The tablets were soluble in water, chloroform or benzene to the extent of about 80 per cent. The insoluble portion appeared to be largely composed of starch, with about 4.5 per cent. of some inorganic matter, probably talc. The chloroform-soluble portion was found to consist chiefly of amidopyrin (first introduced as pyramidon). Besides amidopyrin, the chloroform-soluble matter was found to contain a small quantity of caffein and may have contained small amounts of other substances. It was concluded that Midol depends essentially on amidopyrin for its therapeutic effect. Amidopyrin belongs to the group of pyrazolon derivatives whose preparations are used for their antipyretic and analgesic action. While there is reason to believe that they have less tendency to disintegrate the red blood corpuscles than the phenetidin compounds, in other respects they are open to the same objection. Some susceptible individuals experience nervous and circulatory depression even after small doses of preparations of the pyrazolon group, while after large doses instances of collapse have been reported. Obviously, amidopyrin is a drug that has no place in preparations for self-drugging, that is, in "patent medicines."

CARDIAC FAILURE AND ANTITOXIN IN DIPHTHERIA

A letter from a New Jersey subscriber, too long to publish in detail, relates a case of diphtheria as follows:

A child of 7 years developed a sore throat with a little white spot on one tonsil. The second day of illness, 3,000 units of diphtheria antitoxin were given. The fourth day of illness there was an extensive diphtheritic membrane over the tonsils, pharyngeal wall and nares, bleeding from the nose, fever of 104.2 F., pulse 140, restlessness, and marked swelling under the angles of the jaw bilaterally. Ten thousand units of diphtheria antitoxin were given. On the sixth day, the throat and nares were clear except for a small area on one tonsil, temperature normal, pulse 102. Five thousand units of antitoxin was given. On the seventh day, the tonsils were clear. The patient was kept in bed. On the thirteenth day after onset, there developed an irregular heart with reduplication of sounds, but no murmur; there was distress in the gastric region and vomiting, and the patient died.

Our correspondent wishes to know the possible part played by the various doses of antitoxin, and whether the 15,000 units was given too late to be of value and could have done any harm.

ANSWER.—The initial dose of 3,000 units of antitoxin on the second day with the exudate limited to one tonsil was a conservative dose. That the disease progressed after it is sufficient evidence that it was not enough, and that the toxin being formed was in excess of that which this amount of antitoxin could neutralize. More antitoxin was then indicated. The 10,000 units given on the fourth day with the symptoms described was not too large; in fact, it was very conservative. If it could have been given a day earlier the outcome might have been different.

The probable cause of death was myocarditis, due to injury to the heart by the diphtheria toxins before sufficient antitoxin had been given to neutralize them. It was not in any way dependent upon the antitoxin. Deaths from cardiac failure in diphtheria were more frequent before the introduction of antitoxin than they are today. Large doses of antitoxin, from 20,000 to 40,000 units, are advocated by persons of the largest experience in the treatment of diphtheria of a severe degree. Such amounts are not harmful. The rule in the administration of antitoxin in diphtheria is to give sufficient antitoxin to control the disease at the earliest possible moment. An excess does no harm. Too little allows irreparable damage to be done.

TEKARKIN—EDWARD PERCY ROBINSON

To the Editor:—I have before me a small publication entitled *Therapeutic Leaves* gotten out by the National Bio-Chemical Laboratory, Mount Vernon, N. Y., which is sent out in the interest of a cancer remedy, "Tekarkin," and some few other things that go with it. Can you tell us who this man Edward Percy Robinson, M.D., New York City, is and what there is to his treatment?

JOHN J. HOSEY, M.D., Dalatha, Fla.

To the Editor:—Is the National Bio-Chemical Laboratory, Mount Vernon, N. Y., an ethical concern?

WILL A. THOMPSON, M.D., Liberty, Ind.

ANSWER.—Edward Percy Robinson's "Tekarkin" was the subject of an article in the Propaganda department of THE JOURNAL, May 28, 1921. A reprint of this will be sent to any of our readers on receipt of a request accompanied by a stamped addressed envelop.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

DELAWARE: Wilmington, Dec. 13. Sec., Reg. Bd., Dr. P. S. Downs, Dover; Sec., Homeo. Bd., Dr. H. W. Howell, 824 Washington St., Wilmington.

KENTUCKY: Louisville, Dec. 6. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

LOUISIANA: New Orleans, Dec. 1-3. Sec., Dr. Roy B. Harrison, New Hibernia Bank Bldg., New Orleans.

MARYLAND: Baltimore, Dec. 13. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

NORTH CAROLINA: Greensboro, Dec. 3. Sec., Dr. Kemp P. B. Bonner, Morehead City.

NORTH DAKOTA: Grand Forks, Jan. 3. Sec., G. M. Williamson, 860 Belmont Ave., Grand Forks.

OHIO: Columbus, Dec. 7-9. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

OREGON: Portland, Jan. 3. Sec., Dr. U. C. Coe, Stevens Bldg., Portland.

PORTO RICO: San Juan, Jan. 3. Sec., Dr. M. Quevedo Baez, Box 804, San Juan.

TEXAS: Dallas, Nov. 15-17. Sec., Dr. F. J. Crowe, 918-919 Dallas County Bank Bldg., Dallas.

UTAH: Salt Lake City, Jan. 3. Director, Mr. J. T. Hammond, Capitol Bldg., Salt Lake City.

VIRGINIA: Richmond, Dec. 13-16. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.

Texas June Examination

Dr. T. J. Crowe, secretary, Texas State Board of Medical Examiners, reports the written examination held at Austin, June 21-23, 1921. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 72 candidates who took the physician's and surgeon's examination, 71 passed, including 3 osteopaths, and 1 failed. The following colleges were represented:

PASSED			
College	Year Grad.		Per Cent.
University of Louisville Medical Dept.	(1910)	83.5, (1921)	90.5
Tulane University	(1918)	81.3, (1921)	81.1, 82, 83.6
Harvard University	1912)		88.5
Minneapolis College of Physicians and Surgeons	(1906)		83.9
Columbia University	(1920)		89.7
University of Pennsylvania	(1921)		89.5, 89.6
Meharry Medical College	(1921)		82.5, 83.1
Baylor University	(1921)		76.6, 77.5, 81.6, 83.5, 83.6, 83.9, 83.9, 84.5, 84.8, 85.1, 85.5, 85.5, 85.6, 86.4, 86.6, 86.8, 87.1, 87.8, 88.1, 88.1, 88.2, 88.9, 89.9, 90.1, 90.3, 91.6, 92.3, 92.9
University of Texas	(1921)		83.6, 84.3, 85.1, 85.3, 86.7, 87.1, 87.2, 87.6, 88, 88.5, 88.6, 88.6, 88.8, 89.2, 89.6, 89.9, 89.9, 91.1, 91.1, 91.2, 91.2, 91.5, 92.3, 92.6, 94.6, 95.1	
Osteopaths		75.4, 78.6,	82.9

FAILED		
Meharry Medical College	(1921)*	

* No grade given.

Indiana July Examination

Dr. William T. Gott, secretary, Indiana State Board of Medical Registration and Examination, reports the written examination held at Indianapolis, July 12-14, 1921. The examination covered 15 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 72 candidates examined, 71 passed and 1 failed. Thirty-nine candidates were licensed by reciprocity. The following colleges were represented:

PASSED			
College	Year Grad.		Per Cent.
College of Medical Evangelists	(1920)		90
Indiana University School of Medicine	(1920)*	(1921)	75, 81, 82.7, 83, 83.5, 84, 84, 85.5, 87, 87, 87, 87, 87, 87.7, 87.7, 87.8, 88, 88, 88, 88, 88, 88, 88, 88.5, 89, 89, 89, 89, 90, 90, 90, 90, 90, 91, 91, 91, 91, 91, 91.5, 91.5, 91.7, 92, 92, 92, 92, 92, 92, 92, 92, 92.7, 93, 93, 94, 96
University of Kansas School of Medicine	(1921)		86
University of Louisville Medical Department	(1921)		86
Eclectic Medical College	(1920)		86
Ohio State University College of Homeopathic Med.	(1921)		91.6
University of Cincinnati	(1921)		86
Jefferson Medical College	(1921)		88, 92
Vanderbilt University	(1921)		92
Osteopaths		82, 87, 88, 89.5,	91.8, 92.9

FAILED	
Osteopath	82†

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
University of Colorado	(1913)	Colorado
Howard University	(1907)	Dist. Colum.

Chicago College of Medicine and Surgery	(1917)	Illinois
Illinois Medical College	(1904)	Alabama
Loyola University	(1916)	Kentucky
Northwestern University	(1891), (1909)	Illinois
Rush Medical College	(1908), (1916), (1919,2),	Illinois
Starling Medical College	(1898)	Illinois
University of Illinois	(1920)	Illinois
Southwestern Homeopathic Med. Coll. and Hosp.	(1905)	Colorado
University of Louisville Medical Dept. (1915) Delaware	(1905), (1912)	Kentucky
University of Maryland	(1912), (1917)	Maryland
University of Michigan Medical School	(1903), (1912)	Michigan
Barnes Medical College	(1901)	Illinois
Homeopathic Medical College of Missouri	(1891)	Illinois
Missouri Medical College	(1897)	Illinois
Washington University Medical Department	(1919, 2)	Missouri
Ohio State University College of Medicine	(1916)	Missouri, Ohio
Western Pennsylvania Medical College	(1900), (1902)	Penna.
Meharry Medical College (1913), (1916), (1918) Tennessee	(1908) Tennessee, (1910)	Kentucky
Vanderbilt University	(1914)	Tennessee
Osteopaths		Ohio (2)

* No grade given.

† Fell below 60 per cent. in two subjects.

Maine July Examination

Dr. Frank W. Searle, secretary, Maine State Board of Registraiton of Medicine, reports the written examination held at Augusta, July 5-6, 1921. The examination covered 10 subjects and included 90 questions. An average of 75 per cent. was required to pass. Twenty-four candidates were examined, all of whom passed. Four candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hering Medical College		(1902)	87
Bowdoin Medical School		(1921)	80, 83, 84, 85
Boston University		(1920) 86, (1921)	82, 84, 85, 87
Harvard University		(1912) 83, (1921)	85, 86, 87, 87, 87
Tufts College Medical School		(1904) 78, (1907)	81, (1921) 82
Columbia University		(1917)	89, (1920) 85
McGill University			(1919) 79
University of Montreal			(1920) 84

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Harvard University		(1903)	New Hamp.
University of Pennsylvania		(1902)	Penna.
University of Vermont		(1903), (1906)	Vermont

North Dakota July Examination

Dr. G. M. Williamson, secretary, North Dakota State Board of Medical Examiners, reports the oral, written and practical examination, held at Grand Forks, July 5-8, 1921. The examination covered 13 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 7 candidates examined, 4 passed and 3 failed. Four candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College		(1921)	78
State University of Iowa College of Medicine		(1920)	87.4
University of Maryland		(1911)	75.6
School of Physicians, Reykjavik		(1917)*	75.1
	FAILED		
University of Illinois		(1916) 72, (1920)	72.5
University of Pennsylvania		(1917)	71.1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University		(1917, 2)	Illinois
State University of Iowa College of Medicine		(1904)	Iowa
Minneapolis College of Physicians and Surgeons		(1903)	Minnesota

* Graduation not verified.

Wisconsin September Report

Dr. J. M. Dodd, secretary, Wisconsin State Board of Medical Examiners, reports that 6 candidates were licensed by reciprocity and 6 candidates were licensed on government credentials at the special meeting held at Milwaukee, Sept. 8, 1921. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1920), (1921)	Illinois
Detroit College of Medicine and Surgery		(1918)	Michigan
University of Michigan Medical School		(1918)	Michigan
Western Homeopathic College		(1858)	Kansas
University of Pennsylvania		(1915)	New York

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College		(1917)	U. S. Army
University of Illinois		(1918)	U. S. Navy
Barnes Medical College		(1911)	U. S. Army
Beaumont Hospital Medical College		(1892)	U. S. Army
Fordham University		(1917)	U. S. Army
Western Pennsylvania Medical College		(1901)	U. S. Army

Book Notices

RADIANT ENERGY AND THE OPHTHALMIC LENS. By Frederick Booth. Introduction by Whitefield Bowers, A.B., M.D. Cloth. Price, $2.25 net. Pp. 226, with 230 illustrations. Philadelphia: P. Blakiston's Son & Co., 1921.

There are thirteen chapters in this book, dealing with the anatomy of the eye, the physics of light, vision and the different phases of refraction. The majority are devoted to definitions in an attempted epigrammatic form, illustrated with schematic drawings that would be given a "B" rating in the eighth grade. The diction is atrocious and the punctuation is haphazard (we found one comma, and that was misplaced). The proof-reading was evidently done under poor illumination, if at all, for the mistakes in spelling are painfully numerous. The frequent use of far-from-clear definitions, contradicted often in the following paragraph or chapter, introduces a monotone into a subject which, under rational treatment, is vitally interesting. From the standpoint of the ophthalmologist, glaring misstatements abound, particularly in that section devoted to the treatment of myopia. The chapter dealing with convergence is unusually offensive and is merely a mass of ill written and poorly illustrated definitions that are confusing. Among the "causes of asthenopia" may be found: "In the case of young unmarried women, a weakness peculiar to their sex; young men may have violated the moral laws." Not more than 85 per cent. of the matter devoted to perimetry is wrong, but the remainder is written so confusedly that, from a practical standpoint, it is useless. Some seven pages are devoted to the ophthalmoscope and its use, but the version is so garbled that it would require far more than the mentality of a three months' night school mechanic to comprehend it. The last chapter deals with mathematics, and is a jumble of mathematical signs, geometric and algebraic problems, one page of logarithm tables, and some miscellaneous data.

OPERATIVE SURGERY. By J. Shelton Horsley, M.D., F.A.C.S., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. Illustrated by Miss Helen Lorraine. Cloth. Price, $10. Pp. 721, with 613 illustrations. St. Louis: C. V. Mosby Company, 1921.

A textbook on operative surgery necessarily must be brought up to date to contain present day operative procedures. This Dr. Horsley has done. He describes operations which are used by prominent surgeons and proved by his own experience to be valuable. Particular stress is laid on the preservation of physiologic function and the interpretation of the biologic processes that follow surgical operations. In view of the interest with which surgery of the blood vessels and nerves following gunshot injuries is now regarded, the chapters on the most recent technic are particularly timely. Credit is given to men who have experimentally and clinically given us improved and better methods in these two important branches of surgery. Plastic surgery is also well covered. Surgery of the various regions of the body is taken up systematically, with an effort to include all of the common operations. The important subject of operations on the tendons, which often receives little space, is considered very well. The illustrations are good.

STUDIES IN DEFICIENCY DISEASE. By Robert McCarrison, M.D., D.Sc., Hon.LL.D., Fellow of the Royal College of Physicians, London. Cloth. Price, $10. Pp. 270, with 52 illustrations. New York: Oxford University Press, 1921.

This is a valuable contribution to the study of vitamins and deficiency diseases, the most noteworthy feature being the careful study of the conditions of the various organs and tissues in animals that had died from blood deficiency experimentally produced, or killed when the earliest symptoms of such deficiency made their appearance. As stated elsewhere, "in this regard, the present investigation is much more complete than any other with which we are familiar. It is the work of the clinical pathologist as compared with that of the biochemist, and is accordingly all the more important from the physician's standpoint. The biochemist has indeed blazed the trail into the unexplored regions of dietetics, and now the clinical investigator must follow to build a solid

V. 7
1921

road along which every physician must travel." The book is divided into four parts. Part 1 contains the introduction, a chaper on vitamins, and the description of the experiments. Part 2 deals with the factors concerned in the onset of deficiency disease and with symptomatology. Part 3 is devoted to pathogenesis of deficiency disease and the morbid anatomy of the different organs. Part 4 deals with the practical application of the work described in the other parts, the final chapter on selection of food containing some interesting examples of deficient dietaries, not only of the poor but also of the well-to-do. The illustrations are original. Throughout the book the other properties of diet besides its content in vitamins are taken into full account. The calory value, the proportion of the different food elements and the amount of inorganic salts are all given full consideration. The book will be of real value to the wide-awake physician.

A BOOK ABOUT THE BEE. By Herbert Mace. Cloth. Price, $2 net. Pp. 138, with 24 illustrations. New York: E. P. Dutton & Co.

There are numerous books about bees, but few that are easily readable and at the same time informative; Mr. Mace has supplied an account which fulfils both of these requirements. The biology of the bee is peculiar and affords much interesting speculation. Mr. Mace supplies enough information of a technical character to arouse the reader's interest and to make him want more. Heredity and evolution in the life of the bee are briefly touched on. Mr. Mace believes that the best treatment for bee stings is the application of ammonia water. But he is quite convinced that prevention is better than cure, and that vicious colonies should be prevented by providing a new queen from a gentle stock. "One characteristic bees have," he says, "which will always enable persons pursued to escape: they will not enter dark places other than their own hives, and by taking refuge in a shed the bees may be outwitted." A chapter on the diseases of bees also has special medical interest. These diseases include dysentery due to unsuitable food, a contagious condition known as "foul brood" caused by a bacillus; another serious epidemic disease produced by a small protozoan parasite which inhabits the digestive tract, and infestation with a large parasite known as the "blind louse." There are also other minor diseases, such as bee paralysis affecting the hind legs, and endemics which appear and disappear without as yet any satisfactory explanation. Mr. Mace is so impressed with the wisdom of the bee colony that he sees "no reason why there should not be bee doctors in the community. Otherwise," he says, "we must conclude that those cases in which diseases have become manifest and then disappeared have been merely good fortune."

URINARY ANALYSIS AND DIAGNOSIS BY MICROSCOPICAL AND CHEMICAL EXAMINATION. By Louis Heitzmann, M.D. Fourth edition. Cloth. Price, $4. Pp. 362, with 131 illustrations. New York: William Wood & Co., 1921.

This well-known book of Heitzmann is intended as a purely practical one and, as such, admirably fulfils its function. It is divided into three general divisions dealing, respectively, with the chemical examination, the microscopic examination and the general microscopic urinary diagnosis. In the first part "only those tests are given which can be used with advantage and without the necessity of a completely equipped chemical laboratory by the general laboratory worker and by the practitioner." This section is entirely adequate for its purpose and contains sufficient explanatory matter to enable the worker to interpret his results properly. The section on microscopic examination is especially full and complete, being the distinctive portion of the work. Considerable stress is laid upon the differentiation of the various types of epithelial cells, a matter which is not always as simple as might be supposed from a perusal of this section. As pointed out in the preface, "A careful microscopic examination of the urinary sediment is of infinite value to the practicing physician in helping him at arriving at correct diagnoses in many doubtful cases, and is frequently of much greater value than the most painstaking chemical examination." The third section treats of the various clinical conditions which may be differentiated or diagnosed by microscopic examination of the urine. Chapter XIX, on "Determination of the Functional Efficiency of the Kidneys," is contributed by Dr. Walter T. Dannreuther. While this is a fairly comprehensive and satisfactory presentation of the subject, it does not mention the exceedingly valuable and easily performed tests of Mosenthal, an oversight which should be corrected in future editions. This book may be recommended to those who desire a guide to urinary examination. The text is clear and concise, the selection of chemical methods is excellent, the section on microscopic examination is especially comprehensive, and the illustrations clearly show the points brought out in the text.

THE TREATMENT OF ACUTE INFECTIOUS DISEASES. By Frank Sherman Meara, M.D., Ph.D., Professor of Clinical Medicine in the Cornell University Medical College, New York. Second edition. Cloth. Price, $7. Pp. 806. New York: The Macmillan Company, 1921.

In this edition, several new chapters have been added. Among the more important of these is one on epidemic influenza which is thorough and comprehensive. His review of the literature on the epidemic of measles, streptococcus pneumonia and meningitis, covering the experience with these diseases in army camps, adds much to the value of the book. The new chapters on epidemic encephalitis and trench fever are complete, and embody the recent knowledge acquired in these subjects. New material has been added with regard to rat bite fever and Rocky Mountain spotted fever. The practical value of the book has also been greatly enhanced by the addition of chapters describing the treatment of the more common acute infections of the respiratory tract, namely, coryza, tonsillitis, laryngitis, tracheobronchitis and acute pleurisy. The closed method of treatment of the streptococcus and influenza types of empyema is described in detail by Dr. Alfred S. Taylor. The author has produced a well rounded book and has avoided the slighting of any of the diseases treated. The summarizing of the subject matter in condensed form at the end of each chapter is practical.

LES CARDIO-RÉNAUX. Étude Théorique et Pratique. Par le Docteur O. Josué, Médecin de l' Hôpital de la Pitié, et le Docteur Maurice Parturier. Paper. Price, 12 francs. Pp. 219. Paris: E. le François, 1921.

This is a theoretical and clinical consideration of the important group of cases so often spoken of as cardiorenal or, using the more comprehensive term, cardiovascular-renal. While the book contains little that could be called new, the subject is treated in a fresh, up-to-date manner and with the clearness of style that we associate with the best French medical literature. The author treats of the false cardiorenal disease that is really only a failing heart with manifestations of a congestive lesion in the kidney; the true cardiorenal condition with at times the cardiac, at times the renal, features predominating; the means of diagnosis with emphasis on the laboratory aids, and, finally, treatment. There are no dull pages. Many practical hints as to diagnosis and treatment are to be found. The author's views as to the equilibrium between the kidney and the heart in health and of the disruption of such relation in disease with more or less successful attempts at a restoration of the equilibrium by hypertrophy of the heart, on the one hand, or increase in the concentrating power of the kidney, on the other, are attractive, helpful and well worth perusal.

THE AMERICAN HOSPITAL OF THE TWENTIETH CENTURY. A treatise on the development of medical institutions, both in Europe and in America, since the beginning of the present century. By Edward F. Stevens, Architect, Member of American Institute of Architects. Second edition. Cloth. Price, $7.50. Pp. 380, with 480 illustrations. New York: Architectural Record Company, 1921.

The book is described by the author as "a treatise on the development of medical institutions, both in Europe and America, since the beginning of the present century." It contains twenty chapters dealing with construction, administration, heating and equipment of hospitals as well as with ward units, medical, surgical, children's, maternity, psychopathic, tuberculous, laboratory and contagious departments, various sizes of hospitals, nurses' homes, kitchen and laundry, landscape architecture and remodeling. An appendix deals with war hospitals. The illustrations are unusually well selected and there is a complete index. It is a handy and useful volume for any one interested in or comtemplating the construction of a hospital.

Medicolegal

Status of Physicians Appointed by the Court

(Atkinson v. United Railways Co. (Mo.), 228 S. W. R. 483)

The Supreme Court of Missouri, Division No. 2, reverses a judgment for damages obtained by the plaintiff for personal injuries, because her attorney, in his address to the jury, directed attention to the omission of the defendant to call as a witness a certain neurologist as the one man who knew best about the plaintiff's neurotic condition, whose acquaintance was well known to the defendant, indicating that he was the defendant's own witness, and asked the jury to draw from the incident an inference most favorable to the plaintiff's story. The court says that the argument was prejudicial, and that it was error to permit it.

When a party fails to call a witness under his control or with whose testimony he is particularly acquainted, and of which the other party is ignorant, it is not improper for counsel on the other side in the argument to comment on the failure to produce such witness. This is particularly true when a party fails to call his own physician. In such cases, of course, the other side could not produce such a witness because the knowledge which the witness acquired by examination of the plaintiff would be privileged—a privilege which could be waived by the plaintiff. On the other hand, the rule seems to be general that no unfavorable inference may be drawn, and no unfavorable comment made by counsel in his arguments on account of the absence of a witness whose evidence is equally accessible to the two parties. It is reversible error to permit an argument of that character. The plaintiff in this case seemed to admit the rule, but contended that, as the neurologist in question was appointed by the court on the application of the defendant, he was the defendant's witness, and the plaintiff had not equal access to what he knew. This rendered it necessary to inquire by what authority the court makes such an appointment.

The law invests the trial court with authority to appoint physicians to make physical examinations of the plaintiff in a physical injury suit. The defendant cannot demand it as a matter of right, but the court in its discretion may do it in the furtherance of justice. When the court makes such an appointment, it does so because it determines in its discretion that the case calls for the opinion of disinterested and unbiased physicians, not friends of either party, whose testimony is likely to be biased. This court has placed the authority of the court in such cases on the same ground as the general power to compel a discovery. The power to make such an appointment involves an order requiring the plaintiff to submit to examination. The court could not compel the plaintiff to submit to such examination by the witnesses for the other side. The physicians appointed in such cases are the officers of the court. The order is made because an exhibition to the jury or the court of the infirmities about which the inquiry is made would not disclose the facts as fully and clearly as the examination of experts would reveal them. There was no ground for saying that the neurologist in this case was a witness of the defendant.

Cannot Require Submission to Major Operation or One for Hernia

(Henley v. Oklahoma Union Ry. Co. et al. (Okla.), 197 Pac. R. 488)

The Supreme Court of Oklahoma says it is apparent that the state industrial commission misconstrued the provisions of the workmen's compensation law of Oklahoma in that the commission had exercised jurisdiction to order the claimant in this case, who had developed a hernia as a result of an accident occurring in the course of his employment, to submit to a major operation under penalty in case of his failure to comply with the order of forfeiting his right to compensation. The law provides for the injured employee proper medical and surgical treatment at the expense of the employer; and the treatment provided for is in addition to the compensation provided for under the Act of 1919, during disability; but nowhere in the act is the commission authorized to require the injured employee to submit to a serious operation involving a risk of life, however slight, in order that the pecuniary obligation created by the law in his favor may be minimized. The award in the case at bar presupposed that the operation would be successful, and that the claimant would be cured. That was in excess of the commission's authority. The respondents in their brief contended that an operation for hernia is not regarded as a dangerous or serious operation, but is a comparatively slight inconvenience, and results in a permanent cure. The record in this case did not disclose the kind of hernia the claimant was afflicted with, but the court cannot agree with the contention that an ordinary operation for hernia is to be regarded as a slight inconvenience, and the court knows of no medical authority or reputable physician that would class an operation for hernia as a minor operation. On the other hand, ordinary hernia requires the administration of an anesthetic and an incision of the abdominal wall, and in some instances it proves fatal. The rule appears to be supported by the overwhelming weight of authority that no man shall be compelled to take a risk of death, however slight, in order that the pecuniary obligation created by law in his favor against his employer may be minimized.

Joy-Riding by Physician's Chauffeur

(Lansing v. Hayes et al. (N. Y.), 188 N. Y. Supp. 329)

The Supreme Court of New York, Appellate Division, Third Department, in affirming a decision of the state industrial commission denying an award of compensation, says that this was a proceeding under the workmen's compensation law by Mrs. Lansing to recover for the death of her husband, the respondents being Dr. Hayes, a physician and surgeon, and an insurance company as insurance carrier. Lansing was the chauffeur of Dr. Hayes. He drove his employer to a certain place one night, arriving there at about 9:30, and was told to come back for him at 12 o'clock. In the meantime the car was left in the care and control of the chauffeur. He took some friends for a ride, stopping a couple of times for drinks. On the way back, at about 11:25, he met a car, the head lights of which blinded him for the time being, and the car skidded and went into a ditch. Lansing was killed. The physician swore in his first notice of injury that Lansing was in his employ when killed; that he was in the habit of doing what he wanted to with the car so long as he kept his engagements with him, which he always did; that Lansing was in his employment all of the time, day and night, and that he paid him $20 a week. The physician's conception of his contract with Lansing was shown when, in answer to the question, "On this occasion, what would have been your attitude, supposing he came at 12 o'clock, and you found out later that he took a party and went to Herkimer?" he replied: "I wouldn't have said anything about it. I wouldn't have discussed it. I felt he was worth more money than I gave him." The claim by the physician that Lansing was in his employment all of the time was of the character of the statement that any one can make of his servants hired by the week, month or year. But the liability of the respondent insurance company was founded on contract; this third party was a party to that contract, and could be held only so far as the employment was covered by that contract. The insurance carrier made its contract on the basis of a physician's chauffeur. The duties such chauffeur is to perform and the risks he will encounter in the performance of that duty are known; at least, can be comprehended at their worst. Does it include joy-riding? The court fails to see it.

Society Proceedings

COMING MEETINGS

American Association of Anatomists, New Haven, Conn., Dec. 28-30.
American Physiological Society, New Haven, Conn., Dec. 28-30.
Am. Soc. for Pharm. and Exper. Therap., New Haven, Conn., Dec. 28-30.
Hawaii, Medical Society of, Honolulu, Nov. 21.
Porto Rico, Medical Association of, San Juan, Dec. 10-11.
Radiological Society of North America, Chicago, Dec. 7-9.
Society of American Bacteriologists, Philadelphia, Dec. 27-29.
Southern Surgical Association, Pinehurst, N. C., Dec. 13-15.
Western Surgical Association, St. Louis, Dec. 9-10.

Miscellany

DEDICATION OF THE PEKING UNION MEDICAL COLLEGE

On September 15 the Peking Union Medical College of China was dedicated, the exercises continuing for one week. The American Medical Association was represented at the dedication by Dr. George E. de Schweinitz, President-Elect, who has made the following report to the Board of Trustees:

Report of President-Elect, Dr. George E. de Schweinitz

To the Board of Trustees of the American Medical Association:

The exercises pertaining to the opening of the Union Medical College of Peking began on September 15 and continued for one week. Each weekday morning from 9 to 11 there were largely attended conferences in the hospital in its various departments. These included operations, demonstrations and clinics, followed at 11:30 a. m. by a paper on some medical or surgical subject delivered in the general session. Each evening was devoted to an address of general or public health interest, for example, plague, hookworm, the conquest of yellow fever, biochemistry, hospital organization, and the history of medicine. The afternoons were given up to sight-seeing tours. On Sunday there were religious exercises conducted by the Rt. Rev. L. H. Roots.

The impressive ceremonies of the formal opening took place on Monday, September 19. A procession of delegates, ambassadors and ministers of foreign countries, representatives of the Chinese government, members of the board of trustees and faculty and of the Chinese Medical Board passed

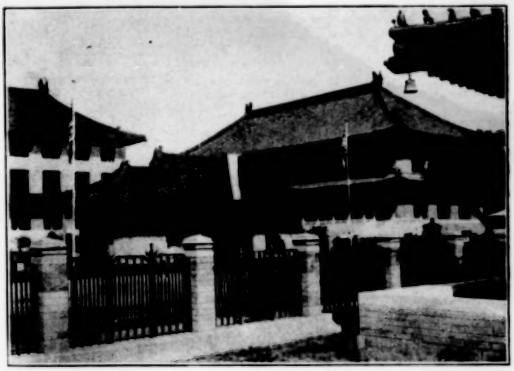

Fig. 2.—A group of laboratory buildings: Physiology Building to the right; Chemistry Building to the left.

Fig. 1.—Members of the board of trustees of Peking Union Medical College: From left to right: Dr. Francis W. Peabody, Harvard Medical School; Dr. Henry S. Houghton, director of the college; Miss Eggleston, assistant secretary of the board of trustees; Edwin R. Embree, secretary of the Rockefeller Foundation; Prof. Paul Monroe, Teachers College, Columbia University; James L. Barton, secretary, American Board of Foreign Missions; Dr. William H. Welch, Johns Hopkins University; Dr. Richard M. Pearce, director, Rockefeller Foundation, Division of Medical Education; George E. Vincent, president, Rockefeller Foundation; John D. Rockefeller, Jr.; Roger S. Greene, resident director of the Rockefeller Foundation China Medical Board; F. H. Hawkins, London Missionary Society; Martin A. Ryerson, chairman, board of trustees, University of Chicago; J. Christie Reid, Medical Missionary Association of London.

to the auditorium. Mr. George Vincent, president of the Rockefeller Foundation, introduced the new director, Dr. Henry S. Houghton. Addresses were made by the Minister of Foreign Affairs and the Minister of Education of the Chinese government, by Mr. Roger Greene, representing the China Medical Board, and by Mr. John D. Rockefeller, Jr., who recited the history of the Peking Union Medical College and described its organization, development and purposes. The attendance was large; many had come from all over China, some from Japan and not a few from America and Europe—physicians, scientists, educators, public health officers and nurses, as well as members of the laity interested in the problems of medical instruction and practice. The splendid buildings, premedical school, laboratories and hospital constructed with due regard to the beauty of Chinese architecture are admirably equipped, and within their walls every opportunity for acquiring a high-class medical education and engaging in research work is presented, as it pertains not only to undergraduate but also to graduate work.

A very large number of universities, medical schools and scientific associations sent formal greetings by accredited representatives—so large a number that it was not possible to find time for a separate announcement. The list was therefore printed, and formed part of the official program.

It so happened, however, that your representative delivered the opening address, and preceded it by a short salutatory, and took that opportunity to convey publicly to the audience and the authorities of the Union Medical College the greeting of the American Medical Association, and later to hand to the director, Dr. Houghton, the credentials. These were received with high appreciation.

During your representative's visit in China he had the opportunity of speaking to the members of the National Medical Association of China in Peking, to the Shanghai branch of the same association, and to a large gathering of physicians, both foreign and native, in Shanghai, and on each occasion the work and aspirations of the American Medical Association were emphasized. The president of the Shanghai branch of the National Medical Association of China formally requested your representative to give to the Board of Trustees and Officers of the American Medical Association the greetings and good wishes of the China Association, and expressed the hope that a closer scientific affiliation might be established between the National Medical Association of the Far East and that of America.

Your representative has on numerous occasions had opportunities of discussing with American Medical Missionaries, earnest men doing splendid work all over China, problems of

mutual interest pertaining to public health work and medical activities in general. Almost without exception these men expressed the hope that some way might be found whereby they could become members of the American Medical Association. Your representative, therefore, desires to bring this matter to your attention, and he hopes to your favorable consideration, and Dr. Welch is in agreement with this recommendation.

While in Japan, your representative's reception by many distinguished physician in that country was most cordial. Their admirable scientific work is too well known to require description. We suggest that formal invitations shall be sent to a few distinguished Japanese and Chinese physicians to be present at the next meeting of the American Medical Association.

GEORGE E. DE SCHWEINITZ, President-Elect.

The importance of this occasion in the history of the progress of medical science caused THE JOURNAL to request a statement from Mr. E. R. Embree, secretary of the Rockefeller foundation:

Report of Mr. E. R. Embree

To see and to dedicate the Peking Union Medical College, scientists and delegates made their way to Peking at the most alluring period of the autum, from Japan, from England, Scotland and Ireland, from Java and Korea and the Philippines, from Canada and from France, from the United States and from every important province of China.

THE PROCESSION AND THE PROGRAM

The academic procession of these eminent visitors on September 19, the day of the formal dedication, was striking in its contrast. Scientists from the East and from the West marched together in occidental academic costume, passing in slow procession beneath the great overhanging roofs of green tile, past modern laboratories and age-old water carts, through rows of students of western medicine and past groups of wondering coolies and ever-present beggars. The street cries of the singing craftsmen merged with the martial rhythm of the new great organ—the first to make its appearance in Peking in these thousands of years—

Fig. 3.—Physiology Building.

as the column swept slowly into the beautiful temple-like building which within proved to be a modern auditorium.

The dedication ceremonies and the medical conference held in connection with these exercises extended over a week and a day—from September 15 to September 22. Each morning clinic sections occupied the first two hours, visiting professors alternating with members of the college faculty in

Fig. 4.—A corner of the Auditorium; Anatomy Building at the left.

giving demonstrations in medicine, surgery, obstetrics, pathology and the medical and surgical specialties. The attendance and the interest at these six or seven sectional clinics held each morning throughout the week were a gage of the scientific value of the conference and a prophesy of the significance to individuals and institutions throughout China of the new college and its brilliant faculty.

The last hour of each morning was devoted to a paper delivered in the college auditorium by one of the visiting scientists on some phase of medicine. The afternoons were given over to receptions, to inspection of the new buildings, and to personally conducted sight-seeing tours about Peking.

At nine each evening an address on a medical topic of general interest was given in the auditorium. These evening programs included an introductory survey of medical education in China by Dr. Hume of Changsha; a recount of adventures in public health by President Vincent; moving pictures and demonstrations of health propaganda by Dr. W. W. Peter, of the China Public Health Council; and the valedictory address of the conference by Dr. Welch.

DESCRIPTION OF THE COLLEGE

The institution erected by the Rockefeller Foundation is of an architectual style characteristic of the best in Chinese classic and sacred buildings, and is to be maintained in accordance with modern scientific standards. Sixteen buildings, with sweeping green tile roofs and great overhanging eaves, house the laboratories, hospital wards, and auxiliary structures of the institution proper. These are situated on the Yü Wang Fu, the ancient palace grounds of Prince Yü.

V. 7 1921

One block east, on Hatamen Street, stands the building of the old Union Medical College, now occupied by the Pre-Medical School, which gives three years of intensive training in the chemical, physical and biologic sciences preparatory to medicine. A little farther east, across Hatamen Street and situated a couple of blocks apart, are the north and south residence compounds. Here, shut off by high walls from the dirty, disease-filled hutungs of Peking, groups of modern brick houses with electric lights, furnace heat and running water stand on trim New England lawns, shaded by ancient trees, banked by shrubs and flowers. These are the homes of members of the faculty and their families. Near the south compound stands the old H'sin kai lu Hospital, now being transformed into a men's dormitory. Adjoining both the H'sin kai lu and the south compound lie the palace grounds of Prince Yi in dilapidated grandeur.

THE FACULTY

The faculty falls naturally into three groups: first, a nucleus of physicians who have served valuable terms in mission hospitals and schools and who were selected from the six or seven hundred medical missionaries in China and further trained under fellowships in England or America before being called to positions on the staff; second, a group who have been brought directly from teaching or research

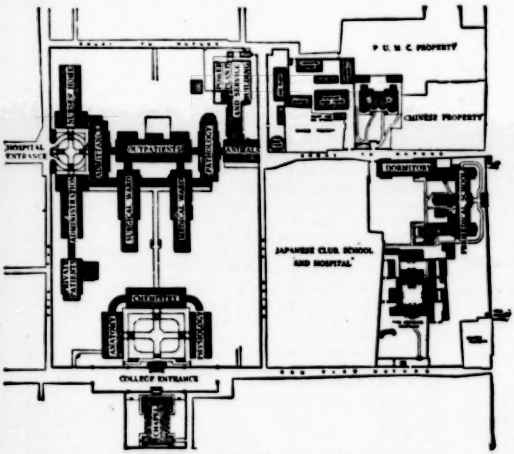

Fig. 5.—Plan of Peking Union Medical College.

institutions in the West to continue their scientific careers in the new college; and third, Chinese. The latter already form a fair proportion of the whole faculty. It is hoped that their number will steadily increase and that their academic and administrative responsibilities will be rapidly extended.

PURPOSE OF THE SCHOOL

It has long been recognized that neither this institution, nor any number of schools which one agency may maintain, will be able to train the great body of medical practitioners needed by the Chinese. The purpose, therefore, in establishing the Peking Union Medical College has been to set standards, to train leaders, to demonstrate what an adequate medical college in China should represent. Thus by a single institution it is hoped to influence an entire nation. It is because of this purpose, which has been adhered to consistently, that so great significance was attached to the attendance at the dedication of the large body of medical men from all parts of China and to their expressed desire to share in the opportunities for cooperation and for advanced study.

COST AND MAINTENANCE

The expense of constructing the buildings has been great. The war, loss of exchange, and the difficulty of erecting Western laboratories and wards and in installing power-driven machinery in the Orient have all contributed to multiply a total cost which under the best of conditions probably would have amounted to four millions gold. The expenditures for equipment and supplies also have been larger than originally planned.

The budgets of the college and hospitals for the next three years are slightly below those of similar well-established institutions of high standing in the United States. But the sums made available and the programs adopted are so much above those of other colleges and hospitals in the Chinese Republic that they make this institution unique in all China—in some aspects unique in the entire Far East. This places upon the faculty a responsibility for leadership in teaching, in hospital management and in the advancement of medical science and the public health to which they are alive. Few medical schools, few faculties have ever had before them the opportunities or the challenge to high endeavor which now confront the Peking Union Medical College.

CONCLUSION

China, as one is constantly reminded, is a great and slow-moving mass. The very magnitude of the work forbids the expectation of hasty results—Rome was not built in a day. As Mr. Rockefeller pointed out in his dedication address, not in terms of a day or a year or a decade is the work of this institution to be judged. But in the revolving years and generations who can tell to what tree of influence this mustard seed may grow in the life of the great old country of China?

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

July, 1921, 1, No. 4

Thermal Death Point of the Human Intestinal Protozoan Cysts. W. C. Boeck, Washington, D. C.—p. 365.

Alastrim in Jamaica. W. G. MacCallum, Baltimore.—p. 388.

Human Trichomonas in North China. E. C. Faust, Peking, China.—p. 410.

Biometric Data on Infant Mortality in the United States Birth Registration Area, 1915-1918. R. Pearl, Baltimore.—p. 419.

Giardia Enterica: A Parasitic Intestinal Flagellate of Man. C. E. Simon, Baltimore.—p. 440.

***Studies on Experimental Rickets. VI. Effects on Growing Rats of Diets Deficient in Calcium.** E. V. McCollum, N. Simmonds, P. G. Shipley and E. A. Park, Baltimore.—p. 492.

***Id. VII. Relative Effectiveness of Cod Liver Oil as Contrasted with Butter Fat for Protecting Body against Insufficient Calcium in Presence of Normal Phosphorus Supply.** P. G. Shipley, E. A. Park, E. V. McCollum and N. Simmonds, Baltimore.—p. 512.

Experimental Rickets.—Rats fed on diets which are low in calcium, but which contain a sufficient supply of the fat soluble A and have an approximately normal content of phosphate, develop a pathologic condition of the bone which has certain fundamental resemblances to human rickets. The condition is characterized by increased persistence of the epiphyseal cartilage, its invasion by blood vessels from the shaft, failure in lime salt disposition, the formation of a mixed zone between the cartilage and shaft (the rachitic metaphysis), and the overproduction of osteoid tissue. Gross deformities which cannot be differentiated from those caused by rickets are seen at necropsy. This pathologic condition differs from rickets, as that disease commonly occurs in man, in that the arrangement of the proliferative zone of cartilage cells is maintained, and that the evidences of bone resorption in the diaphysis are excessive. The rickets-like condition of the skeleton does not develop, if the deficiency in calcium is compensated for by the addition to the diet of calcium carbonate. The rickets-like condition never develops if the animal is allowed to receive cod liver oil, and the administration of cod liver oil, when the condition is well advanced, is followed by healing of the lesion with the formation of an

osteoporotic bone. Since this pathologic condition in the skeleton is in no way prevented by an amount of butter fat which is amply sufficient to protect the animals against keratomalacia, it is necessary to assume that butter fat exercises a very feeble influence in protecting animals against the development of rickets-like lesions.

American Journal of Medical Sciences, Philadelphia

October, 1921, **162**, No. 4

*Pylorospasm in Adults: Its Medical and Surgical Treatment. J. M. T. Finney and J. Friedenwald, Baltimore.—p. 469.
*Striatal and Thalamic Types of Encephalitis. Symptoms and Syndromes Referable to Basal Ganglia in Epidemic Encephalitis. J. R. Hunt, New York.—p. 481.
*Vegetable Problems in Diabetic Diets. W. A. Orton, Washington, D. C.—p. 498.
Defects of Membranous Bones, Exophthalmos and Polyuria in Childhood: Is It Dyspituitarism? A. Hand, Philadelphia.—p. 509.
Clinical Observations of Hodgkin's Disease, with Special Reference to Mediastinal Involvement. W. S. Lemon and J. B. Doyle, Rochester, Minn.—p. 516.
*Cell Counting Technic: Study of Priority. H. Gray, Boston.—p. 526.
*Malignant Tricuspid Endocarditis: With Report of Five Cases. A. V. St. George, New York.—p. 556.
Treatment of Syphilis. H. S. Newcomer, Philadelphia.—p. 565.
Memorandum on Occupational Study of Syphilis, with Special Reference to Farmers. J. H. Stokes and H. E. Brehmer, Rochester, Minn.—p. 572.
*Heart Irregularity Called "Sino-Auricular Block." S. C. Smith, Philadelphia.—p. 575.
*Bacteria on Subsidiary Coins and Currency. C. B. Ward and F. W. Tanner, Urbana, Ill.—p. 585.
*Case of Meningitis in an Infant Due to a Thread-Like Diphtheroid Organism. M. K. Miller and M. W. Lyon, Jr., South Bend, Ind.—p. 593.

Pylorospasm in Adults.—Finney and Friedenwald agree with Rogers that patients with pylorospasm who remain unbenefited by medical treatment should be operated on, and that pyloroplasty affords the best possible means of cure. Moreover, pain of every character in the upper abdomen should be observed carefully and studied clinically, so that if operation be undertaken for any cause and no explanatory lesion be observed, the advisability of performing a pyloroplasty may be considered—provided, of course, that definite evidence of pylorospasm has been previously noted. This fact is of the utmost importance, inasmuch as the spasm is extremely liable to relax under anesthesia, and the actual condition may therefore be entirely overlooked in the course of the operation.

Types of Encephalitis.—The results of Hunt's investigations may be summarized as follows: The large basal ganglions and especially the corpora striata, are frequently affected in epidemic encephalitis. Involvement of the corpus striatum produces three clinical types or syndromes: (1) a paleostriatal or pallidal syndrome—the paralysis agitans type; (2) a neostriatal syndrome—the choreiform type, and (3) a mixed striatal syndrome—the combined paralysis agitans-choreiform types. These three types are believed to be dependent on the existence of two distinct cellular systems within the corpus striatum. One, the pallidal system, which originates in the motor cells of the corpus striatum and links this structure with important nuclei of the hypothalamic region, and controls the various motor activities of the extrapyramidal tracts. When this system is involved the symptoms of paralysis agitans develop, i. e., paralysis of automatic associated movements with hypertonicity of the muscles and rhythmical tremor. The other, the striopallidal or neostriatal system, which exercises a coordinating and inhibitory influence on the purely motor functions of the corpus striatum. When this system is involved, chorea or spontaneous movements of the automatic associated type develop. The mixed striatal types result from involvement of both systems with the production of symptoms characteristic of each. The recognition of these two systems and fundamental syndromes of the striatum serve to explain and reconcile many peculiarities of striatal symptomatology. The pallidal or paralysis agitans type of lethargic encephalitis may be general, hemilateral or segmental in distribution. Aortive, relapsing and progressive types are also recognized. The neostriatal or choreiform type may also be general, hemilateral or local in distribution. There is an acute choreiform type; a choreoathetosis and athetoid and rhythmical types. Thalamic symptoms also occur in encephalitis lethargica. When present they consist of severe and persistent pain, with disturbances of superficial sensibility, more especially of the pain and temperature sense. Evidences of the complete thalamic syndrome are rarely if ever encountered.

Vegetable Problem in Diabetic Diet.—Orton endeavors to show that the saying that "diabetics must not expect a varied diet" is not necessarily true. There is a vast store of experience on record in the garden literature of the world which diabetics have a special motive in searching for suggestions as to vegetables of value to them and as to methods of cooking to give added variety. Orton is growing eight-one species or kinds of plants in 255 varieties, and has accomplished the aim of having some fresh green vegetables of his own growing every day in the year without a greenhouse. The diabetic needs a hobby to take his mind from his hunger troubles and give him an interest in life. The culture of rare or uncommon vegetables fills his need admirably. The physician can assist in creating the demand by interesting the patients in the possibility of enlarging and varying their diet and then putting them in touch with some nearby gardener who will be found willing to produce the vegetables and supply them as needed. In many cases the physicians will be justified in encouraging patients to move to the country or to the suburbs, to do their own gardening, particularly when they have had previous farm or garden experience and are benefited by exercise. With few exceptions regular outdoor activity increases the carbohydrate tolerance and improves the general health to a remarkable degree. It is not always necessary for the city diabetic to change his residence, for the possibilities of nearby vacant lots are often good if the original soil has not been removed or covered and the ground is not shaded by trees or buildings. Orton gives a long list of vegetables which he has grown and details the method of their preparation as food.

Priority in Cell Counting.—Gray attempts to supplement the existing judicial and somewhat exclusive personal opinions by an inclusive historical review of the men who have contributed to the science of cell counting and to attempt to discern priority for the various procedures. His bibliography goes back as far as 1665.

Malignant Tricuspid Endocarditis.—Malignant tricuspid endocarditis, St. George says, is rare. Bacteriologically, the lesion is associated with different varieties of actively pathogenic micro-organism. Lung emboli or abscesses are practically invariably present. The prognosis is extremely unfavorable, the average duration of life from onset of symptoms being from two to three months.

Nature of Sino-Auricular Block.—Smith is of the opinion that "sino-auricular block" is not a pathologic condition, but is, in all likelihood, a physiologic manifestation in certain hearts. As such its detection does not require drug interference nor does it furnish an indication for modifying the individual's accustomed manner of living.

Bacteria on Coins and Currency.—According to Ward and Tanner there seems to be little basis for the belief that coins bear any close relation to the spread of disease. Coins which are passing from person to person in general circulation come in contact with acids and alkalies which are the formation of soluble salts on their surfaces. These tend to keep down the bacterial flora and porbably to exert a selective action, destroying the nonspore-forming organisms.

Coryenbacterium Trichodiphtheroide Causes Meningitis.—A diphtheroid micro-organism, named *Coryenbacterium trichodiphtheroide*, was isolated by Miller and Lyon as the causative agent in a case of purulent meningitis developing in an infant suffering with bronchopneumonia. It appeared as a small bacillus in the spinal fluid, grew into irregular threadlike forms on first culturing, later becoming bacillary with gram-positive polar bodies and segments of diphtheroid type. It was not pathogenic for rabbits or cavies.

Annals of Surgery, Philadelphia

October, 1921, **74**, No. 4

*Researches on Peri-Arterial Sympathetics. R. Leriche, Lyons, France.—p. 385.

V. 7
1921

*Simplification of Technic in Operations for Harelip and Cleft Palate. J. E. Thompson, Galveston, Tex.—p. 394.
Experimental Production of Pancreatitis. E. Archibald and E. C. Gibbons, Montreal, Can.—p. 426.
*Drainage of Abscess of Pancreas. A. J. Ochsner, Chicago.—p. 434.
*Traumatic Pancreatitis. H. B. Delatour, Brooklyn.—p. 435.
Chronic Cholecystitis Without Stones: Diagnosis and Treatment. W. Meyer, New York.—p. 439.
Surgical Management of Gastric Ulcers. D. C. Balfour, Rochester, Minn.—p. 449.
Altered Anatomy and Physiology of Cecum and Ascending Colon, Result of Adhesions. G. G. Ross, Philadelphia.—p. 458.
Carcinoma of Lower Part of Sigmoid in Boy Fourteen Years of Age. I. Olmsted, Hamilton, Ont.—p. 464.
*Surgical Treatment of Megacolon. C. N. Dowd, New York.—p. 468.
Management of Pelvic Abscess in Acute Appendicitis. E. Eliot, Jr., and O. C. Pickhardt, New York.—p. 480.
Mechanics of Production and Treatment of Spiral Fractures. E. Rixford, San Francisco.—p. 490.
Inequality of Lower Extremities Following Fracture of Shaft of Femur in Children. E. D. Truesdell, New York.—p. 498.
Keratin and Keratohyalin in Tumors of Hypophysial Duct. P. Bailey, Boston.—p. 501.

Research on Periarterial Sympathetics.—The sympathetic nervous plexuses included in the external layer of blood vessels seem to possess a real autonomy. The systematic study of the phenomena which follow the exciting of average sized arteries, that is, of prevailing muscular structure, Leriche says, reveals the existence of a very characteristic physiologic reaction which never fails in normal circumstances. Leriche presents results of his researches on this subject especially the use made of his findings in surgical treatment.

Cause of Cleft Palate and Harelip.—The anatomic faults present in harelip and cleft palate are discussed by Thompson, and he formulates rules of technic by which the deformed structures can be brought into the position they would have occupied if union of the component parts of the face and palate had occurred at the proper time, that is about the seventh week of intra-uterine life. The moment embryonic fusion fails, Thompson says, the great and probably the only agent in preventing subsequent union is the tongue, which exerts constant pressure between the edges of the cleft until it succeeds not only in prying the jaws apart, but in pushing the palatal plates upward until they come to occupy a somewhat vertical position. The mechanism of this disrupting force can be traced in every case. Whenever the gap is large enough for the tongue to be inserted, evidences of mascular pressure are always present and the direction in which the disrupted parts are moved is always that of the tongue thrust, i. e., from behind forward and from below upward. Since the force exerted by the tongue is greatest at the tip and decreases gradually backward toward the epiglottis where it reaches its minimum, the deformity is greatest where the prying force of the tongue can be exerted to greatest advantage. Thus in clefts confined to the soft palate the muscular action of the posterior part of the tongue is so feeble and so ineffective as to be negligible. On the other hand, in clefts extending through both soft and hard palate but stopping short at the alveolar margin, the tongue exerts considerable force on the lateral palatal plates of the maxillae, forcing them upward and outward against the lateral walls of the nose and producing an unusually wide cleft. In addition, the anterior and lateral portions of the alveolar ring are also pushed outward to a considerable extent. But the severest degrees of deformity occur in examples of complete palatal cleft extending through the alveolar margin into the nostril. The tongue has full play and acts like a wedge driving the maxillae apart in front so that they swing outward like double doors on hinges which are situated behind near the posterior ends of the alveolar borders. The principles of treatment are founded on accurate knowledge of the anatomy of the deformity; in other words, on a correct estimate of the degree of distortion. This can be measured graphically by comparing the deformed alveolar border with one reconstructed from a mold taken of the alveolar border of the mandible of the patient. Thompson cites a number of cases to illustrate the points made.

Drainage of Pancreas Abscess.—Ochsner directs attention to a method of draining an abscess located in the tail of the pancreas. In a case cited an incision was then made in the left flank, immediately below the last rib. The space behind the pancreas was loosely packed with gauze, in the middle of which was placed a large rubber drainage tube. The gauze and the drainage tube were passed out of the wound in the flank and two cigaret drains were added and carefully placed behind the pancreas. Five days after the operation the abscess broke spontaneously and a large amount of thick pus escaped. The gauze and the cigaret drains were removed gradually. The rubber tube was left in place for two weeks, when the discharge had been greatly reduced. The tube was then removed and the wound healed in two weeks.

Traumatic Pancreatitis.—Delatour cites a case of subcutaneous laceration of the head of the pancreas from a wagon wheel passing diagonally over the body from the right thigh upward and to the left across the body to the lower left ribs. There was moderate shock and complaint of pain in the upper right thigh and also in the epigastric region. At operation the head and about one half of the remainder of the pancreas was found lacerated and contused. Very extensive areas of fat necrosis were observed in the omentum. Drains were carried down to the injured tissue. About three weeks later symptoms of sepsis manifested themselves. Partial obstruction of intestines by adhesions was suspected. Four weeks after the first appearance of these symptoms a diagnosis of pancreatic cyst was made and operation advised. The abscess was drained through an incision made in back just below twelfth rib, 2 inches to the right of spine. The points to be noted in this case are: (1) The comparative absence of shock, although over one half of the pancreas was badly contused and lacerated. (2) The principal symptoms, both during the first hours after the injury and during the stage of development of the cyst, were vomiting and severe upper abdominal pain occurring at intervals. In each instance these were immediately relieved by operation. Emaciation was marked until after the cyst was drained, although the boy was eating well most of the time. (3) The ease of approach from behind and the better drainage obtained.

Treatment of Megacolon.—Dowd reports three cases and reviews the literature with special reference to treatment. These three cases illustrate various phases of the problem. Case 1 shows the good result which may come from the removal of a sufficient portion of the enlarged colon. Case 2 shows that a patient with this disease may drift along beyond the possibility of relief, either medical or surgical, and that this drifting may occur while she is trying to attend to the ordinary duties of life. Cases 1 and 3 both illustrate the comparative safety of the extraperitoneal two stage method of resection (Mikulicz).

Arkansas Medical Society Journal, Little Rock

October, 1921, **18**, No. 5

History of Care of Insane. C. C. Kirk, Little Rock.—p. 93.
Cancer of Rectum. My Method of Performing Perineal Proctotectomy. J. L. Jelks, Memphis.—p. 98.
In Cancer of Neck of Uterus, Should Cautery, Radium and Roentgen Ray Precede or Follow Radical Operative Excision? R. C. Dorr, Batesville.—p. 104.

Boston Medical and Surgical Journal

Nov. 3, 1921, **185**, No. 18

Ether Day at Massachusetts General Hospital. Opening Address. Dr. Henry P. Walcott, Boston.—p. 525.
Address. F. C. Shattuck, Boston.—p. 526.
Personality of Hospital. H. Cushing, Boston.—p. 529.
History of Insanity During Past Century with Special Reference to McLean Hospital. C. McF. Campbell, Waverley.—p. 538.
Place of Civil General Hospital in Scheme of Medical Preparedness. M. W. Ireland.—p. 544.

Canadian Journal of Mental Hygiene, Montreal

July, 1921, **3**, No. 2

Psychic Epidemics. H. Oertel.—p. 1.
Study of 5,600 Psychiatric Cases. Survey of 767 Cases of Illegitimacy. C. K. Clarke.—p. 11.
What Can State Hospital Do to Help in Struggle Against Syphilis? A. J. Rosanoff, King's Park, N. Y.—p. 25.
Democracy and Mental Hygiene. W. D. Tait.—p. 31.
Critical Survey of Intelligence Testing. P. Sandiford, Toronto.—p. 37.
Physician's Responsibility in Connection with Insane and Their Committal to Hospital, Together with Suggestions for Examination of a Patient. H. C. Steeves, New Westminster, B. C.—p. 47.
Prevention of Mental Breakdown. C. A. Baragar.—p. 55.
Organization of State Institutions for Feebleminded in United States. W. B. Cornell, Albany, N. Y.—p. 65.
Attitude Toward Mentally Diseased. G. O. Grain, Winnipeg.—p. 71.

Florida Medical Association Journal, St. Augustine and Jacksonville

October, 1921, **8**, No. 4

Simplified Infant Feeding. F. C. Moor, Tallahassee.—p. 61.
Failing Heart. S. R. Roberts, Atlanta, Ga.—p. 66.
Minimum Standards of Nurses' Training Schools. L. A. Hollohan, Clearwater.—p. 69.

Journal of Bacteriology, Baltimore

September, 1921, **6**, No. 5

Mannitol Producing Organisms in Silage. G. P. Plaisance and B. W. Hammer.—p. 431.
Principles Concerning Isolation of Anaerobes. Studies in Pathogenic Anaerobes. II. H. H. Heller, San Francisco.—p. 445.
Indol Production by Bacteria. J. F. Norton and M. V. Sawyer, Chicago.—p. 471.
Nitrification. IV. Carbon and Nitrogen Relations of Nitrite Ferment. A. Bonazzi, Wooster, Ohio.—p. 479.
Toxins of B. Dysentriae, Group III. T. Thjøtta and O. F. Sundt, Kristiania, Norway.—p. 501.

Journal of Laboratory and Clinical Medicine, St. Louis

October, 1921, **7**, No. 1

Serology of Syphilis. Syphilimetric Color Indices. E. F. Mahr, Washington, D. C.—p. 1.
*Development of Chemotherapy of Organic Arsenicals and Related Physical Phenomena. C. N. Myers, New York.—p. 17.
Ventilation, Weather and Common Cold. Study of Prevalence of Respiratory Affections Among School Children and Their Association with School Ventilation and Seasonal Changes in Weather. G. T. Palmer, Detroit.—p. 39.
Apparatus for Rapid Determination of Nitrogen in Blood and Urine. C. E. Reyner, Detroit.—p. 53.
Automatic Pipetting Device. W. F. Lorenz, Madison, Wis.—p. 54.
Modification of Kjeldahl Still for Distilling Large Quantities of Water. C. E. Swanbeck, Cleveland.—p. 57.

Chemotherapy of Arsenicals.—The chemotherapeutic development of arsenicals is discussed by Myers showing the relation of pentavalent arsenical products to those of the trivalent condition as illustrated in the "arseno" type. The rationale of the physiologic action is discussed from the chemical point of view showing the effect of the chemical action of mass, concentration, and pharmacodynamics. A complete chart showing all the possible methods of arriving at the final product salvarsan (with references) is given. Impurities and their relation to toxicity are discussed. The physical chemistry of arsphenamin is given with reference to the presence of colloidal properties and a discussion of the question of solutions in reference to viscosity, potential, dissociation, equilibrium, and ultrafiltration and their relation to toxicity. The administration of the drug in relation to concentrated and dilute solutions is discussed. Standing for thirty minutes tends to decrease the toxicity of freshly alkalinized solutions of arsphenamin. Need of clinical standardization is pointed out. Reactions are explained in terms of disturbances of chemical equilibrium (precipitates).

Journal of Pharmacology and Experimental Therapeutics, Baltimore

October, 1921, **18**, No. 3

*Relation of Dextrose and Water Content of Blood to Antipyretic Drug Action. H. G. Barbour and J. B. Herrmann, New Haven, Conn.—p. 165.
Activity of Isolated Uterus. S. Ogata, London.—p. 185.
*Toxic Effects of Chlorin Antiseptics in Dogs. H. G. Barbour and A. M. Hjort, New Haven, Conn.—p. 201.
*Reaction to Epinephrin Administered by Rectum. R. G. Hoskins, Baltimore.—p. 207.
*Influence of Phenylcinchoninic Acid and Ethyl Ester of Paramethylphenylcinchoninic Acid on Renal Excretion. V. C. Myers and J. A. Killian, New York.—p. 213.
*Effect of Water Diuresis on Elimination of Certain Urinary Constituents. A. D. Carr, St. Louis.—p. 221.

Blood Content and Antipyretic Drug Action.—Barbour and Herrmann's experimental research shows that sodium salicylate, acetylsalicylic acid, antipyrin and quinin all increase the blood sugar concentration in both normal and fever dogs. After salicylates the total blood dextrose increases from 25 to 50 per cent. Antipyrin apparently gives a less marked effect than do salicylates, while quinin exhibits a greater. In Barbour's colon bacillus fever dogs, as well as in human febrile cases, these drugs produced a notable dilution of the abnormally concentrated blood. This dilution accounts for the decrease in body temperature. In normal dogs antipyretic drugs often increase the body temperature slightly, in which case they may diminish the fluid content of the blood. According to the theory of antipyretic action evolved from our work the mobilization of dextrose is one of the chief factors responsible for the blood dilution by antipyretic drugs in fever.

Toxic Effects of Chlorin Antiseptics.—Given intraperitoneally in dogs, chloramine-T appears to possess one and one-half times the toxicity of surgical solution of chlorinated soda and but one fifth the toxicity of corrosive sublimate. All three of these antiseptics Barbour and Hjort found produce acute or chronic peritonitis, the severity depending on the amount injected. Fatal intraperitoneal injections of chloramine-T appear not only to fail of absorption but to attract in addition at least an equal amount of fluid from the circulation. All of the above mentioned antiseptics produce circulatory and muscular collapse with reduction in body temperature. Large amounts of 2 per cent. chloramine-T by mouth can be tolerated by dogs without other significant effect than vomiting.

Reaction to Epinephrin Administered by Rectum.—Epinephrin was administered by Hoskins to dogs and cats by rectum. Blood pressure and intestinal peristalsis were recorded. The drug, in doses of from 1 to 5 mg., produced either no or relatively slight effects. In positive reactions peristalsis was depressed and blood pressure either augmented or depressed, the effect persisting from three minutes to an hour in various cases.

Effect of Phenylcinchoninic Acid on Kidney.—Phenylcinchoninic acid (cinchophen) and the ethyl ester of p-methylphenylcinchoninic acid (tolysin), exercise a general stimulating effect on kidney excretion. This action is most marked in the case of uric acid, but Myers and Killian assert it is possible to demonstrate a similar action in the case of urea and chlorids, provided cases are selected with a slightly high blood concentration of these substances.

Effect of Water Diuresis on Kidney.—The effect of water diuresis on the elimination of chlorids, creatinin, urea, ammonia, sulphates, phosphates, and carbonates was studied by Carr in normal human subjects. The data obtained confirm the finding of Marshall in regard to urea, creatinin, and chlorids. Sulphates are increased in practically all experiments. Ammonia and phosphates are generally increased, but may be unchanged. All of these substances are decreased in percentage. Carbonates (i. e., total carbon dioxid) are increased not only in absolute but in percentage amount. The hydrogen ion concentration of the urine is decreased during diuresis.

Kentucky Medical Journal, Bowling Green

October, 1921, **19**, No. 9

Medical Evolution and Reconstruction. J. A. Stucky, Lexington.—p. 615.
Perforation of Uterus from Curret; Case Report. L. W. Frank, Louisville.—p. 621.
High Blood Pressure. G. W. Payne, Bardwell.—p. 622.
Annual Death Rate of Logan County and Russellville. W. Byrne, Russellville.—p. 623.
Rheumatism. T. J. Marshall, Bardwell.—p. 625.
Infected Tonsils: Their Relation to Systemic Diseases. E. S. Mellwain, Cynthiana.—p. 628.
Uterine Hemorrhage. W. Barrow, Lexington.—p. 630.
Differential Diagnosis of Surgical Diseases of Biliary Passages. H. J. Phillips, Louisville.—p. 633.
At Head of Hollow. J. F. Smith, Louisville.—p. 637.
Care of Pregnant Woman. H. L. Read, Louisville.—p. 639.
Diagnosis of Chronic Appendicitis. M. Casper, Louisville.—p. 641.
Two Cases of Carbon Monoxid Poisoning. S. C. Frankel, Louisville.—p. 646.
Focal Infections of Ear, Nose and Throat. G. C. Hall, Louisville.—p. 648.
Focal Infection in Relation to Diseases of Bones and Joints and Their Therapeuses. V. E. Simpson, Louisville.—p. 651.
Heart and Focal Infections. W. A. Jenkins, Louisville.—p. 656.
Focal Infections of Genito-Urinary Organs. O. Grant, Louisville.—p. 658.
Bronchial Asthma. L. K. Baldauf, Louisville.—p. 663.
Prenatal Clinic of Louisville City Hospital. A. N. Pickett, Louisville.—p. 670.
Case of Meningitis. S. G. Dabney, Louisville.—p. 671.
Important Considerations in Establishing a Full Time Health Department Permanently. R. J. Mallott, Harlan.—p. 673.

Laryngoscope, St. Louis

September, 1921, **31**, No. 9

Endocrines in Otology. C. E. de M. Sajous, Philadelphia.—p. 659.
Deafness: Its Treatment. H. Hays, New York.—p. 673.
Radical Mastoidectomy Followed by Formation of False Membrana Tympani and Normal Hearing. L. G. Dunlap, Anaconda, Mont.—p. 687.
Nature's Radical Mastoidectomy: Case Report. L. W. Morsman, Hibbing, Minn.—p. 691.
Nasal Status in Retrobulbar Optic Neuritis. T. J. Gallaher, Denver.—p. 692.
Case of Nasal Hemorrhage (Postoperative) Requiring Ligation of External Carotid Artery. H. B. Cohen, Philadelphia.—p. 698.
New Tonsil Instrument. H. M. Goodyear, Cincinnati.—p. 699.
Cases of Postnasal Choanae Malformation by Bony Occlusion. J. C. Kirby, Boston.—p. 701.
Membranous Obstruction of Bronchi, Clinically Diphtheritic, with Repeated Removals with Bronchoscope. C. E. Purcell and J. B. Acree, Paducah, Ky.—p. 704.
Stammering: Bibliography of Past Decade—1911 to 1920, inclusive. C. S. Bluemel, Denver.—p. 709.
Two New Tonsil Crypt Evacuators. H. S. Wieder, Philadelphia.—p. 715.
Hemostatic Forceps for Ligating Vessels in Tonsil Fossa. J. F. Callahan, Brockton, Mass.—p. 717.

Medical Record, New York

Nov. 5, 1921, **100**, No. 19

Radium Therapy in Cancer. G. S. Willis, New York.—p. 793.
Anthrax as a Non-Occupational Disease. L. Hannah, Sylvania, Ga.—p. 796.
A Specific Cure for Pneumonia and Pulmonary Tuberculosis. S. Stern, Atlantic City.—p. 798.
*Pan-Pemmican. G. Homan, St. Louis.—p. 804.
Possible Exophthalmic Rôle of the Thymus in Goiter and in Myxedema. G. A. Friedman, New York.—p. 806.
Standardization of Hospital Technic. J. Selinger, New York.—p. 808.
Three Cases of Central Speech Defect. N. J. P. Van Baggen, San Francisco.—p. 809.
Simple Method of Irrigating the Anterior Urethra. M. M. Nemser, New York.—p. 812.

Pan-Pemmican.—Under this name Homan describes a mixture of meat, fruit and bread with seasoning to increase its acceptability to the digestive powers. He claims that this is a wholesome food which can be produced at little cost, thus reducing the high cost of living.

Philippine Journal of Science, Manila

June, 1921, **18**, No. 6

Composition, Solubility and Oxidation of Lumbang Oil. A. P. West and Z. Montes.—p. 619.
Some Nondiaspine Coccidae from Malay Peninsula, with Descriptions of Apparently New Species. H. Morrison, Washington, D. C.—p. 637.
New Genera and Species of Philippine Membracidae. W. D. Funkhouser, Louisville, Ky.—p. 679.
Some Philippine Wasps of Family Chrysididae. S. A. Rohwer.—p. 691.
Description D'Un Canthydrus (Coleoptera-Dytiscidae) Nouveau, Des Iles Philippines. P. R. Peschet, Paris, France.—p. 693.
*Position and Size of Kidneys Among Filipinos. J. C. Nanagas.—p. 695.
*Length and Position of Vermiform Appendix in Filipinos. A. Garcia and J. Solloza.—p. 707.
Philippine and Bornean Species of Hoplionota (Coleoptera). F. Spaeth, Vienna, Austria.—p. 721.

Position and Size of Kidneys in Filipinos.—Forty-eight bodies from the dissection laboratory were examined by Nanagas. The kidneys were in general at higher levels in males than in females. The variability of the horizontal planes of both kidneys was greater in males than in females. The upper pole of both male kidneys was generally found at the lower half of the twelfth dorsal vertebra, and in the case of the left often at the level of the disk above it, with a tendency in both sides to be higher. In females it is also found at the level of the twelfth dorsal vertebra, though apparently not so frequently as in males, with a tendency to occupy lower levels. The right kidney is found farther from the median line of the back than the left, regardless of sex, and in corresponding sides it is found farther from that point in males than in females. In general the left kidney is larger than the right. The female kidneys, considered either in general or by corresponding sides, were larger than those in the males. There is a gradual increase in size of both kidneys with age, up to a certain maximum, attained in males between 30 and 40 years, and in females up to the age of 30 with a gradual decline thereafter.

Appendix in Filipinos.—Three hundred and forty human appendixes were examined by Garcia and Solloza and they found that the length of the human appendix is very variable and does not seem to keep any definite relation to race. In Filipinos the length of the appendix bears a definite relation to age, being relatively longer in younger than in older persons and, furthermore, that it gradually grows in length with age, attaining its maximum between the ages of 20 and 50 years, gradually declining thereafter. It is longer in males than in females. It is higher in children than in adults and that in the former the subcecal is the commonest position and the retrocecal in the latter, the antececal being very rare in either. The pelvic position considered normal by some authors was not even found in this series and must be considered infrequent in Filipinos.

Tennessee State Medical Association Journal, Nashville

October, 1921, **14**, No. 6

Lethargic Encephalitis. C. C. Turner, Memphis.—p. 209.
Protein Sensitization in Vasomotor Rhinitis. J. J. Shea, Memphis.—p. 218.
Indications for Tonsillectomy and Its End Results. M. M. Cullom, Nashville.—p. 222.
Cock-Sureness in Practice of Medicine. L. A. McSwain, Paris, Tenn.—p. 227.
Surgical Aspects of Congenital Pyloric Stenosis. W. T. Black, Memphis.—p. 232.

U. S. Naval Medical Bulletin, Washington, D. C.

October, 1921, **15**, No. 4

Color Blindness; Objections Found with a Few Color Perception Tests Now in Use. E. J. Grow.—p. 717.
Cardiac Irregularity. E. U. Reed.—p. 732.
Handling of Recruits at Recruit Depot, Marine Barracks, Paris Island, S. C., with Special Reference to Physical Examination. J. C. Parham.—p. 740.
Four Centuries in Treatment of Syphilis. L. W. Shaffer.—p. 749.
Field Hospital of United States Marine Corps. G. F. Cottle.—p. 762.
Training and Care of Football Squad at United States Naval Academy During Season of 1920. M. H. Roberts.—p. 770.
Gas Poisoning in Warfare. G. H. Mankin.—p. 775.
Venereal Prophylaxis Among United States Marines at Honolulu, Hawaii, 1909-10. H. H. Lane.—p. 783.
Manila Galleon. W. M. Kerr.—p. 787.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

Sept. 30, 1921, **15**, No. 3

Ceratopogonine Midges of Gold Coast: Descriptions of New Species. H. F. Carter, A. Ingram and J. W. S. Macfie.—p. 177.
Prevalence and Character of Tuberculosis in Hongkong. H. H. Scott. I. General Considerations.—p. 213.
*II. Portals of Entry and Mode of Spread of Tuberculosis.—p. 227.
*Multiple Aneurysms in Child. R. H. Kennan.—p. 245.
Lappeted Anoplocephala in Horses. W. Yorke and T. Southwell.—p. 249.
Feeding Habits of Stegomyia Calopus, Meigen. R. M. Gordon and C. J. Young.—p. 265.
*Case of Leprosy. W. Yorke and S. Adler.—p. 269.
Some Fungal Infections in West Africa. J. W. S. Macfie.—p. 271.
Fungus of Genus Nocardia Cultivated from Heart Blood. J. W. S. Macfie and A. Ingram.—p. 283.
Report on Rat Flea Investigation. R. Newstead and A. M. Evans.—p. 287.
Natural Enemies of Stegomyia Calopus, Meigen. C. J. Young.—p. 301.

Portals of Entry and Mode of Spread of Tuberculosis.—Of the 225 cases of tuberculosis in children under 10 years of age, analyzed by Scott, 153, or 65.77 per cent., were found in which the portal of entry was respiratory, and in five others there was a strong probability of a respiratory origin, in which case the percentage increases to 68. Only thirty-one of these 225 cases appeared to be definitely of alimentary origin, i. e., 13.77 per cent., while among those of "uncertain portal" were three others in which the evidence for the alimentary route had considerable weight; if these be included, the total percentage would be 15.11. Cases of isolated primary tuberculosis of the intestine are very rare in Hong Kong; in fact, only four cases were seen. The great majority, then, have a respiratory portal of entry, the proportion to alimentary being as great as between four and five to one. Of 300 cases in adults there were 209 in which the primary portal of entry appeared to be by the respiratory tract, i. e., 69.66 per cent., and in seven others there was considerable evidence in support of the same portal, bringing

the total to 216, or 72 per cent. Only thirty-two have been definitely determined as being of alimentary origin, i. e., 10.66 per cent.; five more were very likely alimentary; this would bring the total to 37, or 12.33 per cent. In four other cases there was a possibility of almost simultaneous entrance by way of the respiratory and alimentary tracts. In the remaining cases the primary portal was uncertain.

Multiple Aneurysms in Child.—An anemic boy, aged 4 years, whose history and physical condition were negative, is the subject of Kennan's discussion. The upper end of the left hypothenar eminence was slightly enlarged, and prominent, and was the site of a pulsating tumor which could be "emptied" by pressure over it, and which then filled again "per saltum." Pressure over the ulnar artery greatly diminished, but did not entirely obliterate pulsation in the tumor. The surface tissues over the tumor were unaltered in color and texture. Just above this tumor, and separated from it by a narrow surface depression, was a second one of similar character. There was no history of injury antecedent to the first hypothenar tumor; the second swelling came quickly two days after a fall, which, however, did not cause bruising or damage to the skin. Subsequently a small pulsating little vessel, slightly bluish in color was noticed about the middle of the right side of his neck, and some time after this his mother found another larger pulsating, uniformly oval swelling a little lower down, occupying the greater portion of the base of the anterior triangle of his neck above the clavicle. None of the tumors caused any pain, and only when the larger neck tumor was firmly pressed in an effort to empty it did the patient show any sign of distress. Examination of the blood showed *Plasmodium falciparum* infection and also eosinophilia (about 12 per cent.). Several very careful and prolonged examinations of the feces yielded negative results. As causes, it appears that septic emboli, syphilis and injury were not present in this case.

Leprosy in England.—The most interesting feature of the case reported by Yorke and Adler is its history. The patient arrived in England in 1912 in good health. Not until 1916 did he first notice small spots on the left side of the face. No further change was observed until 1920 when a ham colored eruption appeared on the trunk and upper and lower limbs. Five months ago he noticed for the first time swelling of the alae nasi. The patient was unaware of the fact that it was leprosy.

British Medical Journal, London

Oct. 22, 1921, **2**, No. 3173

William Harvey, Obstetric Physician and Gynaecologist. H. R. Spencer. —p. 621.
*Physiologic Cost of Muscular Work. A. D. Waller and G. DeDecker. —p. 627.
*Glycosuria of Malarial Origin. G. A. Harrison.—p. 630.
Over Five Hundred Gallons of Fluid from an Ovarian Tumor. J. D. Malcolm. G. A. Gibb.—p. 631.
Method of Skin-Grafting. S. Samuel.—p. 632.
Compound Fractures of Thigh and Leg. N. Dunn.—p. 623.
Theory and Method in Extension of Thigh. R. H. Russell.—p. 637.
Diagnosis and Treatment of Injuries of Intestines. G. Gordon-Taylor. —p. 639.
Employment of Crushing Instruments and Cautery in Certain Intra-Abdominal Operations. C. P. Childe.—p. 646.
Lethargic Encephalitis. E. Bramwell.—p. 648.

Physiologic Cost of Muscular Work. — Waller and DeDecker are of the opinion that the measurement of primary importance to our further knowledge of the physiologic cost of industrial labor consists in the measurement of carbon dioxid expired during the day's work—recording the carbon dioxid values observed as ordinates throughout the day.

Glycosuria of Malarial Origin.—Harrison's patient was aged 32. Following an attack of colitis in March, 1920, he developed malaria. Parasites were found in his blood, but for three weeks only did he continue quinin treatment. The ague stopped, but he had a serious of relapses, but did not take any more quinin. In March, 1921, he sought professional advice on account of excessive thirst. Sugar was found in his urine, and a diagnosis of diabetes mellitus was made. Under carbohydrate reduction the sugar disappeared within three months.

Journal of Laryngology and Otology, Edinburgh

October, 1921, **36**, No. 10

Is Mere Enlargement of a Tonsil Good and Sufficient Reason for Its Enucleation? T. M. Hovell.—p. 457.
Intrinsic Cancer of Larynx: Usual Site of Origin, as Demonstrated at Fifty Laryngofissures; Influence on Diagnosis, Prognosis and Treatment. S. C. Thomson.—p. 462.
Posterior Ethmoidal Cell Exploration. P. Watson-Williams and E. Watson-Williams.—p. 464.
Review of Twenty Consecutive Cases of Acute Mastoiditis Treated by B. I. P. and Primary Suture. F. H. Diggle.—p. 471.
Cranial Osteomyelitis Complicating Accessory Sinus Suppuration. N. Maclay.—p. 478.
Value and Development of Residual Hearing. M. A. Goldstein, St. Louis.—p. 482.

Journal of State Medicine, London

October, 1921, **29**, No. 10

Health of Seamen and How to Safeguard It. R. J. Mackeown.—p. 289.
Municipal Milk Supply. A. Shelmerdine.—p. 297.
Garden City and Public Health. N. Macfadyen.—p. 305.

Medical Journal of Australia, Sydney

Sept. 10, 1921, **2**, No. 11

Roentgen-Ray Examination of Abdomen Following Inflation of Peritoneal Cavity. K. S. Cross.—p. 195.
Acute General Peritonitis. W. R. Groves.—p. 199.
*Tumor of Spinal Cord. J. M. Gill.—p. 201.

Tumor of Spinal Cord.—Gill's patient presented all the classical signs of a meningeal tumor situated in the mid-dorsal region. The history, too, was very typical. The first symptom was pain due to pressure on the nerve roots. Next ensued paralysis and stiffness of the legs, as the tumor got larger; then loss of control of bladder and rectum; finally painful involuntary muscular contractions of the lower limbs, indicating a virtual separation of the lower half of the spinal cord from the brain. On examination immediately after admission there was found complete paralysis of both lower limbs, the hip and knee joints were flexed (a condition sometimes called "paraplegia in flexion") and there were frequent painful spasms in each leg. Sensation was almost completely lost up to the xiphisternal line over the anterior wall of the abdomen. The line of separation was perfectly well defined. Moreover, it remained constant from day to day. The patient complained of intense pain in the back. When the spines of the vertebrae were tapped this pain was greatly aggravated. Pain was always most intense on tapping the spine of the sixth vertebra. As to the nature of the tumor, the history clearly suggested a meningeal origin. A syphilitic lesion was excluded by the absence of a reaction to the Wassermann test. The tumor was situated exactly in the middle line posteriorly and compressed the cord so that it was quite flattened and devoid of pulsation.

Sept. 17, 1921, **2**, No. 12

Muscle Atrophy. A. Juett.—p. 213.
Bilharziosis in Western Australia. D. M. McWhae and T. R. Jagger. —p. 217.
Radical Extirpation of Calcified Hydatid Cysts of Liver with Adventitious Capsule Complete. C. E. Corlette.—p. 220.
Plastic Operation on Face. H. Bullock.—p. 220.
Disarticulation at Hip-Joint for Sarcoma of Femur. T. Fiaschi.—p. 221.

Sept. 24, 1921, **2**, No. 13

*Case of Early Primary Ovarian Pregnancy. J. I. Hunter.—p. 233.

Oct. 1, 1921, **2**, No. 14

Tendon Transplantation in Old Nerve Injuries. H. R. G. Poate.—p. 253.
Limitation of Movement at Metacarpophalangeal Joints: Its Causes and Treatment. D. J. Glissan.—p. 257.

Early Primary Ovarian Pregnancy.—In the case reported on by Hunter abdominal section was performed and the ovary removed twenty-four days after the last menstrual period. Microscopic examination revealed the presence of a growing blastocyst which was apparently less than three weeks of age; this indicated that fertilization occurred after the last menstrual period prior to operation.

Medical Journal of South Africa, Johannesburg

September, 1921, **17**, No. 2

Round Pupil in Cataract Extraction. R. C. J. Meyer.—p. 23.
*Influence of Presence of Dust On Growth, in Vitro, of Certain Micro-Organisms. E. H. Cluver and A. Mavrogordato.—p. 26.
Modern Dietetic Treatment of Diabetes. E. P. Baumann.—p. 27.
Cases of Venereal Disease. H. Gluckman.—p. 28.
Prevention of Deafness with Special Reference to Tonsillectomy and Tonsillotomy. J. L. Aymard.—p. 30.

V. 7
1921

Influence of Dust on Growth of Bacteria.—Cluver and Mavrogordato endeavored to ascertain whether the presence in culture mediums of various insoluble and chemically inactive dusts appreciably influence the growth of certain organisms therein. The dusts employed have been those of quartzite, coal, wood charcoal and "pure" carbon, the last having been obtained from cane sugar; the organisms used have been *B. pyocyaneus*, a pneumococcus, a streptococcus and *B. tuberculosis* (human). The results obtained were as follows: *B. pyocyaneus*, streptococcus and *B. tuberculosis* grew more rapidly and more abundantly in the "dusted" than in the "dust-free" mediums. This augmentary influence appeared to be approximately the same for all the varieties of dust. Pneumococcus: The same general effect was observed with regard to the presence of dust in the medium, but quartzitic dust appeared, on the whole, to augment the growth less than the other dusts. Hence, it is concluded that the presence of fine particles of insoluble and chemically inert substances appears to favor the growth of certain microorganisms in vitro. It could not be demonstrated that quartzite dust was more stimulating than coal, charcoal, or "pure" carbon, nor that "pure" carbon was either more or less stimulating than coal dust.

Practitioner, London

October, 1921, **107**, No. 4

Pathways of Infection in Rheumatic Group of Diseases. G. L. K. Pringle.—p. 229.
Empyema in Childhood. F. C. Pybus.—p. 238.
Uses of Diathermy in Dermatology. W. K. Sibley.—p. 246.
Uterine Hemorrhage and Its Treatment by Galvanic Current. A. Saville.—p. 256.
Prevention of Chronic Gonorrheal Urethritis. M. W. Browdy.—p. 264.
Therapeutic Uses of Anterior Pituitary Gland. T. B. Scott and F. W. Broderick.—p. 278.
Physical Treatment of Enteroptosis. C. MacMahon.—p. 288.
Anxiety. W. J. Jago.—p. 291.
General Practice and Puerperal Fever. A. C. Stark.—p. 295.

South African Medical Record, Cape Town

Sept. 24, 1921, **19**, No. 18

*Case of Juvenile General Paralysis. G. J. Key and A. Pijper.—p. 343.
Tuberculosis Among Native Mine Labor Recruits. J. F. Young.—p. 346.
East Coast Natives. A. I. Girdwood.—p. 348.
Genital Prolapse. J. W. G. Phillips.—p. 350.
Modern Dietetic Treatment of Diabetes. E. P. Baumann.—p. 353.

Juvenile General Paralysis.—Key and Pijper cite the case of a boy, aged 12, who first manifested symptoms when 8 years of age. When about 9 years old he commenced to have sleepless nights, and was frequently noisy. When he was about 10 years old it became evident that he was failing mentally. He was careless about his dress, and his habits became faulty. During the next two years he became more enfeebled mentally; gradually began to lose all interest in things around him; his speech became defective; he would scream loudly for no apparent reason, and toward the latter part of that period was slovenly at table, and eventually had to be fed. About four months before admission the parents noticed that the patient's walking was becoming worse. He fell in the garden on several occasions, and about three weeks before admission was unable to stand without assistance. He was by this time only able to utter a few words, but showed that he could recognize his father and mother. About five weeks after admission, symmetrical gangrene of both feet was well established. On the left foot there was a line of demarcation about the level of the distal end of the metacarpals. The right gangrenous portion extended over half the foot. Six weeks after admission he was unable to take any notice of what was going on around him. The patient's hands were at times cold and blanched, and these attacks were followed by a stage of hyperemia. The hands were kept carefully covered, but in spite of that they became of a definitely bluish tinge. The upper lip and nose were also bluish in color and the skin in these areas peeled off on any attempt being made to wash him. In the beginning of the seventh week the patient had difficulty in swallowing and was unable to retain even milk. He was in a dazed and stuporous state, and was unable to recognize his mother. No seizures were reported. He died toward the end of that week. The presence of syphilis was confirmed by us by means of the Wassermann test. His father gave a 4 plus reaction. The brain was submitted to a careful examination. Vascular abnormalities were very prevalent all over the cortex. The changes were of a very interesting nature. Side by side blood vessels, apparently quite normal, were seen with others which showed complete hyaline degeneration.

Bulletin de l'Académie de Médecine, Paris

Oct. 4, 1921, **86**, No. 31

*The Lipolytic Function of the Lung. H. Roger.—p. 129.
*Hydatidiform Mole and Lutein Cysts in the Ovary. Potocki.—p. 133.
Case of Malta Fever. A. Rémond and Minvielle.—p. 135.

Lipolytic Function of the Lungs.—A longer report of Roger's research is summarized from the *Presse médicale* on a following page.

Hydatidiform Mole and Lutein Cysts in the Ovaries.—Potocki has encountered three cases of association of a hydatidiform mole with polycystic ovaries, but the mole was not malignant. In 120 cases of hydatidiform mole he has had only two cases of chorio-epithelioma. If the cysts increase in size after molar abortion, he advises panhysterectomy.

Oct. 11, 1921, **86**, No. 32

*Roentgenotherapy of Uterine Fibromyomas. A. Béclère.—p. 151.
*Mortality of Infant Wards of the State. F. Ledé.—p. 179.
Palpation of the Appendix. L. Pron.—p. 182.

Roentgenotherapy of Uterine Fibromas.—Béclère's experience with 700 cases has been very favorable, as he reports. It failed in only 1 per cent. of his last series of 300 cases. In 90 per cent. the total duration of the exposures was under four hours; in 60 per cent. under three, and in 13 per cent. under two hours. The intervals brought the total course up to two and a half or three months. The dose was never over 3 or 3½ H units; the exposure never over ten minutes, and usually not over five. This gentle roentgen-ray treatment, he says, can be counted on to cure in almost every case, without pain or danger, and without interfering with the ordinary life or occupations. He regards it as the preferable treatment for fibromyomas of the uterus.

Welfare Work for Infants.—Ledé is member of the board which has charge of the placing out to nurse of infant wards of the state, and he summarizes the results of the work during 1913, 1919 and 1920. The death rate for the total of 329,892 infants was 5.03, 5.88 and 4.47 in these respective years. The children getting breast milk formed 18 per cent. of the whole in 1913, but only 6 per cent. in 1919 and 1920.

Bulletin Médical, Paris

Sept. 24, 1921, **35**, No. 39

*Epilepsy. J. Roubinovitch.—p. 757.
*Symptomatology of Epilepsy. R. Dupouy.—p. 758.
*Treatment of Epilepsy. G. Maillard.—p. 769.

Epilepsy.—Roubinovitch comments on the unity of epilepsy in all its forms, general or partial, transient or persisting, whatever its origin, reflex, infectious, toxic or autotoxic. The war experiences, he says, have confirmed this unity, from simple scotoma scintillans to the most complex motor phenomena.

Symptoms of Epilepsy.—Dupouy describes with much detail what the practitioner should know in regard to the symptoms and diagnosis of epilepsy.

Treatment of Epilepsy.—Maillard says of the management and treatment of epilepsy that until quite recently very little progress had been realized in the treatment of epilepsy, but in late years phenobarbital (luminal)—with or without bromids—borico-potassic tartrate, and surgical intervention have realized great progress. He states that phenobarbital seems to be equally effectual against all the manifestations of epilepsy, seizures, absences, psychic disturbance, traumatic or essential epilepsy, localized or general. With the proper doses, the epileptic manifestations should disappear by the second day. This is the rule, and this effect serves to exclude hysteric crises, as phenobarbital has no action on these. He adds that the physical and mental condition improves likewise under the drug. For a small person, 10 cg. morning and 10 cg. at night are the usual daily dose. Larger persons can take 15 cg. morning and night; children from 10 to 15 should not take over 10 cg. a day, and younger children less than this. Half a glass of cold water should be taken with

it. Some of his patients are taking regularly from 40 to 60 cg. a day. Until the system adapts itself to the drug there may be a kind of drunkenness, like that of alcohol, a psychomotor depression or excitement, drowsiness, staggering gait, weakness of the legs, irascibility or agitation. A tendency to drowsiness or mild excitement shows merely that the patient is getting the adequate dose. The weight and the appetite increase under it. The only contraindication he recognizes is irritability and excitement. This calls for tentative reducing or increasing the dose, or combining it with bromids. (He calls it by the French name, gardénal.)

Paris Médical

Sept. 24, 1921, **11**, No. 39

*Typhoid Heart. J. Minet and R. Legrand.—p. 233.
*Physical-Chemical Factors in Spasmodic Phenomena. A. Leroy.—p. 237.
Guaiacol in Pulmonary Tuberculosis. Brachat.—p. 239.
Treatment of Pulmonary Tuberculosis. Hamant and Jullien.—p. 243.
*Chronic Respiratory Insufficiency in Children. Dumoutet.—p. 246.

Localization of Typhoid Infection in the Heart.—Minet and Legrand summarize from the records 4 cases and report 2 from their own experience in all of which the typhoid infection had settled predominantly in the heart, sparing the bowels. In 2 of the cases the myocardium bore the brunt of the attack without involvement of the valves, and the patients recovered. Necropsy in 3 other cases confirmed the clinical diagnosis of typhoid endocarditis, and acute pulmonary stenosis was evident in the other patients who survived. The endocarditis was of the simple acute form or acute malignant or slow malignant in the various cases. In one case a streptococcus was found associated with the typhoid bacilli.

Physicochemical Elements in Spasmodic Phenomena.—Leroy argues that diseases which present sudden crises or seizures, such as epilepsy and eclampsia, suggest that physicochemical changes are responsible for their abrupt development. The protein complex, he relates, is a transient aggregate of amino-acids, each surrounded with a swarm of ions, and around these in turn gravitate a swarm of satellite electrons. The whole forms a miniature solar system. When these amino-acids, ions and electrons are released, they settle on walls and membranes, modifying their osmotic and electric tension. If we can assume that proteolysis is always accompanied by an increase in the osmotic tension, this would explain at once all this group of pathologic conditions that develop like an explosion.

Respiratory Insufficiency in Children.—Dumoutet refers to what he calls *petite insuffisance respiratoire*, the blood not getting normally oxygenated. When the heart is at fault, there is acrocyanosis; when merely the respiration is defective, the child is pale and chilly, readily fatigued, and listless, the pulse small and slow, the blood pressure low. Exercise reduces instead of increasing the appetite, and a short walk sends the blood pressure and the temperature below normal. The morning temperature may be higher than at evening. The child cannot bear a cold bath or douche without a tendency to cyanosis and dyspnea. The breath can be held abnormally long. Violent exercise has to be forbidden these children, but alternating repose and exercise are the reliance in treatment. A year of surveillance may be necessary, but with this he has witnessed actual resurrections, both physical and mental, when the respiratory insufficiency was of the hyposphyxia type. When the heart is at fault, this persists fragile, and these children will long be frail in respect to their circulation.

Presse Médicale, Paris

Sept. 17, 1921, **29**, No. 75

*Traumatic Lesions of Pituitary. L. Reverchon, G. Worms and Rouquier.—p. 741.
*Prognosis with High Blood Pressure. C. Lian, R. Broca and J. Clément.—p. 743.
*Hemoclasic Crisis under Roentgen Ray Treatment. M. and G. Giraud and G. Parès.—p. 746.
*Action of Quinidin. L. Cheinisse.—p. 748.

Traumatic Lesions of the Pituitary.—Reverchon and his co-workers had under observation for some months a man of 34 with fracture of the base of the skull from an automobile accident, with necropsy. In addition to paralysis of several of the cranial nerves, there were a number of symptoms suggesting injury of the pituitary, including diabetes insipidus, loss of weight, hypotension and childish mentality. We need not wait for acromegaly, adiposogenital disturbance and hemianopsia to assume injury of the pituitary, and the necessity for pituitary treatment. They compare this case with a typical case of pituitary tumor, and ascribe the fatal outcome to the pituitary insufficiency, the hemorrhage from fracture of the sella turcica having entailed sclerosis and atrophy, with coma and collapse of the heart as the degeneration progressed. They have found several similar cases on record with sudden death in the course of pituitary disease, but they know of only three with necropsy.

The Prognosis with Permanently High Blood Pressure.—Lian, Broca and Clément analyze their experiences in the last ten years with cases of permanently high arterial pressure measured under identical conditions, the subject recumbent, and compared with the clinical findings at the time and the clinical course in general. The diastolic pressure is the more instructive as to the actual rise in the pressure, as they explain. The normal range of the diastolic pressure is from 7 to 9 cm. of mercury. Of 77 persons with diastolic pressure above 13.5 cm. of mercury, only 2 are known to be still living, and of the 34 seen before 1919, 26 are known to have died. Further analysis of the 77 cases shows that with a permanently high diastolic pressure, refractory to treatment, a survival of not more than five or six years at longest can be anticipated, and it is seldom as long as this unless the subject can rest and spare himself. Even with this a survival of over six years is exceptional.

The Hemoclasic Crisis During Roentgen-Ray Treatment.—Small doses of roentgen rays seem to have a stimulating and lymphocytosis producing action. Stronger doses entail leukopenia. In a case of myeloid leukemia treated by roentgen exposures of the spleen, the leukocytes dropped from 175,000 to 11,500 in six months and the spleen subsided to normal size. By the end of the third year it had enlarged again, and the leukocytes increased to 125,000, but under renewed roentgen treatment they dropped to 35,000 and the spleen showed some subsidence. The patient felt well except for occasional attacks of pain in the left hypochondrium which yielded each time to the roentgen rays. Unfortunately, the subject seems to be becoming sensitized to the rays of late, each exposure being followed by intense nausea, general malaise, dyspnea and dizziness for a few hours. This *mal des irradiations pénétrantes* or roentgen *kater* is accompanied by a transient *crise hémoclasique* like that described by Widal and his school, although there is no alimentary proteopexy, which shows that the liver cannot be incriminated for it.

Action of Quinidin on the Heart.—Cheinisse concludes from his review of this subject that quinidin may be regarded as free from serious danger, given carefully, and it should rank high in the treatment of arrhythmia. To judge from experiences to date, it seems to be indicated above all in cases of peripheral arteriosclerosis and in hypertonia. Acute and recurring endocarditis do not seem amenable to it. Other circumstances might well explain the fatality in Groedel's case in which a man of 70, with complete heart block, died suddenly the fourth day of taking quinidin.

Sept. 21, 1921, **29**, No. 76

Orchitis from Micrococcus Melitensis. P. Lombard and M. Béguet.—p. 753.
Respiratory Variations in Arterial Pressure. E. Constantin and L. C. Soula.—p. 754.
Vaccine Therapy in Acute Gonococcus Urethritis. Demonchy.—p. 756.

Oct. 5, 1921, **29**, No. 80

*The Functions of the Lungs. H. Roger.—p. 793.
*The Leg Sign and the Toe Sign in Pyramidal Disease. J. A. Barré and G. A. Shepherd.—p. 794.

Functions of the Lung.—Roger describes research which has apparently demonstrated that, besides serving for respiration, the lungs have a protecting and secreting function. They seem to produce a thrombokinase; pulverized desiccated lung tissue applied to a bleeding wound will arrest hemorrhage more quickly than tissues from other organs. The lungs, further, seem to have a disintegrating action on fats. They not only disintegrate them but actually destroy them.

V. 7
1921

Samples of blood taken before and after it has passed through the lungs show a difference in the fat content of 0.5 gm. to the liter. If desiccated lung tissue is added to arterial blood mixed with olive oil, there will be a difference of about 0.5 gm. per liter in the fat content compared with the mixture without lung tissue. He assumes that this lipolytic action of the lungs on the fats from the thoracic duct corresponds to the proteolytic action of the liver on the proteins brought by the portal vein.

Leg Sign of Pyramidal Disease.—Barré and Shepherd have compared the findings with the leg sign and the Babinski toe sign in 100 cases. Analysis of the findings seems to indicate that the leg sign is an indication of pyramidal deficiency, while the toe sign is an indication of irritation of the pyramidal tract. They may be associated or not, as it happens. The leg sign was described in these columns, Feb. 7, 1920, p. 426, when Barré first called attention to it. The patient lies prone, face downward, and the leg is passively raised, flexing it at the knee until it stands vertical. The healthy can hold the leg in this vertical position without effort. But with paralysis or even slight paresis from any lesion in the central motor neuron, the patient is unable to hold the leg thus erect; in spite of all his efforts, the leg drops back to the level of the bed, more or less slowly. It coexisted with the toe sign in more than 40 per cent. of eighty-nine cases, and in more than 27 per cent. of eleven cases of insular sclerosis. It was found alone in over 31 per cent. in the first group, but in none in the second group.

Oct. 8, 1921, **29**, No. 81

*Mild Seric Shock in Man. G. Bouché and A. Hustin.—p. 801.
Anilin Dyes in Therapeutics. L. Cheinisse.—p. 805.

Slight Serum Shock.—Bouché and Hustin have been studying the reaction to subcutaneous injection in man of 0.5 to 2 c.c. of horse serum. The reaction varies widely in different persons, and the local from the reaction in the depths. There seems to be a vascular or sympathetic reaction at first, followed by a trophic or autonomic reaction. The sympathetic phase is observed also in the reaction in the depths of the organism, and this is followed by a reaction similar to that induced in the autonomic system by injection of pilocarpin. The vasotrophic shock from injection of the horse serum thus passes through two phases, and the manifestations are those we see in the anaphylactic shock. But it is a general property of the organism, and this vasotrophic shock forms part of certain affections such as epilepsy, migraine, asthma and urticaria. Their origin will be elucidated only by study of vasotrophic excitants. Anaphylaxis is one, but no doubt there are many others. In epilepsy and asthma, the symptoms develop mainly during the autonomic phase; in migraine, during the sympathetic phase. Symptomatic treatment should be based on this conception. The research reported suggests further the possibility of an anaphylaxotherapy by repeated small harmless anaphylactic shocks. Also the possibility of a curative vaccination with retro-active effect, by the inhibition from one or several ulterior injections of the same antigen after a single injection following the preparatory injection.

Progrès Médical, Paris

Sept. 18, 1921, **36**, No. 38

*Vincent's Angina and Intestinal Spirillosis. M. Bouchut and L. H. Leroux.—p. 437.
General Review of Sterility in Women. Couvelaire.—p. 438.
Diagnosis of Syphilitic Chancres in General. Queyrat.—p. 440.
Constitutional and Accidental Mental Disturbances. Damaye.—p. 442.
Opium and Its Derivatives. G. Faroy.—p. 443.

Fusospirillar Sore Throat and Enteritis.—The man of 25 had alveolar pyorrhea, and Vincent's angina developed, followed in a month by abdominal symptoms, with diarrhea and pains. This association of Vincent's angina and enteritis recurred several times during the year, and the same microorganisms were cultivated from the throat and from the stools, with complete recovery under a course of neoarsphenamin. Bouchet and Leroux emphasize the importance of bacteriologic examination of the stools in cases of enteritis, as this may permit the cure under arsenicals instead of wasting time with other measures, probably futile.

Riforma Medica, Naples

Sept. 17, 1921, **37**, No. 38

*Hydatid Cysts in Lungs. P. Ferro.—p. 889.
*Fracture of the Jaw. G. M. Nejrotti.—p. 891.
Traumatic Lesion of the Thigh. A. Palieri.—p. 893.
Specificity of Tuberculin Reactions. P. Rondoni.—p. 893.
Present Status of Surgery of the Skull. E. Aievoli.—p. 894.
Treatment of Diabetic Acidosis. G. Molinari.—p. 896.

Hydatid Cysts in the Lungs.—There were three cysts in one of the two cases described. In the other, the roentgen and other findings pointed to a large cyst at the base of the left lung, but the operation revealed that it was in the top of the liver. It had pushed up the diaphragm for 12 cm., and recovery was soon complete after the operation on the liver.

Fracture of the Jaw.—Nejrotti expatiates on the absolutely solid fixation realized in the case of which he gives an illustrated description. The fracture of the body of the lower jaw was slanting, and he fastened the stumps together with two horizontal wire loops. A third wire was tied over the first two loops to draw them closer together. This third wire was twisted and drawn up very tight and it exerted such pressure on the other two wires that the whole jaw was drawn into a solid whole. He calls this the "vise loop method," as the third wire acts like a vise to fasten the whole solidly together.

Rivista Critica di Clinica Medica, Florence

Aug. 25, 1921, **22**, No. 24

*Parenteral Protein Therapy in Typhoid. G. Natali.—p. 277.

Protein Therapy in Typhoid.—Natali used a vaccine made from two strains of cholera vibriones in treatment of 10 typhoid patients. No effect was apparent in 5, but in 4 cases the temperature seemed to be favorably influenced, and in one case this heterogenous protein therapy seemed to be influential in aborting the disease. No aggravation of the condition from the intravenous injections was noted in any instance.

Oct. 5, 1921, **22**, No. 28

*Reversibility of Opsonic Sensitization. A. Amato.—p. 325.
Tests of Action of Drugs on Vegetative Nervous System in Typhoid. C. Alessandri.—p. 327. Conc'n.
Means for Activation and for Attenuation in Treatment of Pulmonary Tuberculosis. G. Brecchia.—p. 332. Conc'n.

Opsonic Sensitization.—Amato is carrying on a discussion in regard to the laws regulating the reversibility of the phenomena of opsonic sensitization and of incomplete chemical processes in general.

Brazil-Medico, Rio de Janeiro

Sept. 3, 1921, **2**, No. 8

*Interstitial Fibroma in Pregnant Uterus. M. Totta.—p. 97.
*Prophylaxis of Tuberculosis. A. Fontes.—p. 98. Cont'n.
Medicolegal Notes. Chapot Prevost and J. Ricardo.—p. 103.

Sept. 10, 1921, **2**, No. 9

Sporotrichosis of Orbit and Cheek. Linneu Silva.—p. 115.
Research on the Respiration. M. Ozorio de Almeida.—p. 118.
Transmissibility to Man of Fixed Virus of Rabies. Magalhães.—p. 119.
Proponal in Treatment of Epilepsy. Cunha Lopes, Jr.—p. 120.
Two Medicolegal Signs. Leonidio Ribeiro, Jr.—p. 122.

Sept. 17, 1921, **2**, No. 10

Bilateral Hypertrophy of the Breasts. Arnobio Marques.—p. 129.
Development of the Philophthalmus. Lauro Travassos.—p. 131.
Toxicity of Chenopodium. T. de Almeida, Jr.—p. 132.

Fibroma in Pregnant Uterus.—In Totta's case the woman of about 30 had been married for two years, menstruating regularly until the last two months. For the last few days there had been severe pains in the lumbar region and lower abdomen, spreading to the legs. Palpation revealed an unsuspected tumor, presumably an interstitial fibroma, in the uterus, and in a week the tumor had increased 6 cm. in its vertical diameter and become softer, while the pains had become unbearable. The severe pains from the enlargement of the tumor under the influence of the pregnancy compelled supravaginal hysterectomy.

Prophylaxis of Tuberculosis.—In this third conference Fontes devotes most attention to means to protect the young against tuberculosis, saying that by training in hygiene we can save the child of today to be the resistant man of the

future. He shows how to systematize the campaign against tuberculosis along the line of education, physical culture and protection for sick and well.

Revista Española de Méd. y Cirugía, Madrid

August, 1921, 4, No. 38

*Tamponing with Placenta Praevia. G. Ribas.—p. 465.
*Remote Results of Trauma of Urethra. M. Serés.—p. 467.
Rupture of Perineal Urethra. C. Cortés Figueras.—p. 468.

Tamponing the Uterus for Hemorrhage with Placenta Praevia.—After failure of all other measures, Ribas draws down the cervix and packs the uterus with gauze, packing it in between the inner wall of the uterus and the placenta, as he shows in an illustration, without puncturing the membranes. He has found this effectual in all conditions calling for the inflatable bag, as well as for hemorrhage with low insertion of the placenta. It arrests the hemorrhage and usually starts spontaneous delivery. If not, after ten or twelve hours he pulls out the gauze and tampons anew. Scrupulous antisepsis is imperative, and with this, he says, no complications need be feared.

Remote Results of Trauma of the Urethra.—Serés does not approve of using the retention catheter for traumatic injury of the urethra except when there has been extensive suppuration and the prostatic portion has sloughed off entirely. In one such case he reconstructed the urethra around the retention catheter, and the man has no disturbance in urinating now, two years later. Immediate diversion of the urine through a high incision is imperative, not only to ward off infection but to facilitate the procedures for repair afterward. Circular urethrorrhaphy is the preferable procedure always when possible. In one bull-fighter the mucosa alone was ruptured, and the gap kept increasing until Serés made a circular suture after cutting the edges smooth.

Deutsche medizinische Wochenschrift, Berlin

Sept. 1, 1921, 47, No. 35

Epilepsy Associated with Syphilis. O. Klieneberger.—p. 1017.
Early Neurosyphilis. W. Weigeldt.—p. 1018.
Pleural Shock in Artificial Pneumothorax. Unverricht.—p. 1020.
General Principles of Abdomen Diagnosis. Kulenkampff.—p. 1022.
Preventing Infection and Hospitalism of Infants. Friedberg.—p. 1025.
*Bile Peritonitis. E. Neuber.—p. 1027.
The Extended Roentgen-Wertheim System. Haupt and Pinoff.—p. 1028.
Protective Effect of Friedmann Tuberculosis Treatment. Kretschmer. —p. 1029.
Transmission of Swine Erysipelas to Man. Veilchenblau.—p. 1030.
Retrospect and Prospect in Dermatotherapy. Hübner.—p. 1031.
Present Status of Tests of Intestinal Functioning. Grote.—p. 1032.
Intra- and Extra-Uterine Asphyxia in Infants. L. Blumreich.—p. 1034.

Bile Peritonitis.—Neuber states that the etiology and the pathology of bile peritonitis *(Gallenperitonitis)* are not well understood as yet. It must be sharply differentiated from peritonitis that arises in connection with pericholecystitis. In bile peritonitis we have to consider the passage of bile through the macroscopically intact gallbladder walls, whereas in the latter case the passage of bacteria from the gallbladder causes the peritonitis. In both cases the gallbladder remains intact. With cholecystitis, the passage of bile is secondary. Neuber discusses certain peculiarities of the clinical picture that may be learned from the small number of reported cases; he also reports in detail his own case in a man of 39. The onset, covering five days, was characterized by, first, an uncomfortable feeling, together with a slight chill, followed the second day by vomiting of a yellowish fluid. Examination the fifth day, on admission to the hospital, revealed moderate distention of the abdomen with some tympanites; dulness in both flanks, which disappeared when the patient was turned over; liver dulness normal; free, easily recognizable fluid in the abdominal cavity. Pain was diffuse; temperature, 38.2 C.; pulse, 120 to 130; tongue, coated and scaly. A subicteric tinge was noticeable in both sclerae. On tentative diagnosis of perforation of the gallbladder or stomach, a median laparotomy was performed. On opening the abdominal cavity a profuse quantity of brownish yellow, stringy fluid welled forth, which proved to be bile. The omentum covered the intestine; there were no adhesions that could be referred to an older process. The gallbladder was distended and the intestine and the abdominal wall were saturated with a brownish-yellow pigment, and coated with occasional fibrin deposits. There was no pus. The fluid present in the abdominal cavity amounted to about 4 liters. Careful inspection of the gallbladder and the biliary passages failed to disclose the slightest sign of a perforation. The long operation had weakened the patient greatly and death ensued in a few hours. Necropsy revealed no perforation of gallbladder; its size was normal; the walls were somewhat thick; the cut surface was reddish gray, the inner surface brownish-yellow. The histologic specimens from the gallbladder wall presented normal conditions of all layers except the mucosa, which was lacking in several places, where it was replaced by a crumbly mass of necrotic appearance. The peculiar thing was that there was no sign of an inflammation. In the future, Neuber advises that when fluid bile is found in large quantities in the abdomen, this bile peritonitis should be thought of. If, after a short but reasonably thorough inspection of the biliary system, no perforation is found, the gallbladder should be removed without hesitation.

Medizinische Klinik, Berlin

Aug. 14, 1921, 17, No. 33

*Importance of Vitamins for Children. H. Vogt.—p. 985.
*Serologic Tests for Syphilis. H. Sachs and F. Georgi.—p. 987.
*Ectasia of Portal Vein. F. Glaser.—p. 990.
*Irradiation of Spleen in Hemorrhage. E. Vogt.—p. 991.
Sensory Disturbances in Paralysis Agitans. H. Zweig.—p. 992.
*Turpentine in Treatment of Typhus. A. Brenner.—p. 992.
Serologic Experiences with Silver Salvarsan. G. Ahman.—p. 993.
Unusual Pontine Syndrome. H. Sieben.—p. 996.
Swine Erysipelas in Man. Stengel.—p. 997.
Testing of Disinfectants. M. Feiler.—p. 998.
Principles of Natural Feeding of Infants. K. Blühdorn.—p. 1000.

Importance of Avitaminosis in Childhood.—Vogt describes the present status of our knowledge of vitamins, mentioning among other recent research that of Freise and Rupprecht on the influence of vegetables on calcium metabolism in rachitic infants. They found that calcium was assimilated better under the influence of vegetables. But they also found that this influence was lacking when the vegetable or carrot juice had been heated considerably before being ingested. Vegetables usually form part of the diet of rachitic children. If the findings of Freise and Rupprecht are confirmed by others it is not the fat soluble but the water soluble vitamin that is deficient in rachitis.

Flocculation Tests for Syphilis.—Sachs and Georgi here explain the reason for the difference between the response of active serum to the Wassermann test and the Sachs-Georgi test for syphilis. This they find is due merely to the difference in the salt content of the mediums. Adding a little more salt brings the response of the active serum to the same plane with one technic as with the other.

Ectasia of Portal Vein.—The result of the ectasia from primary sclerosis was cirrhosis of the liver, secondary to the dilatation of the bile-ducts from the compression.

Roentgen-Ray Exposures of the Spleen from Gynecologic and Obstetric Standpoints.—Irradiation of the spleen seemed to aid in promoting coagulation of the blood in only about 50 per cent. of the 68 cases of various gynecologic or obstetric hemorrhagic conditions. In fully 50 per cent. no effect was apparent.

Treatment of Typhus.—Brenner remarks that the only measures which helped in the treatment of typhus were abundance of fresh air, and keeping the sick under the influence of turpentine. He gave in 150 cases from 0.05 to 0.1 gm. at hour intervals, keeping it up through the night, or by inhalation, placing a pledget soaked in turpentine in each nostril. He often used up in this way 20 gm. of turpentine in the twenty-four hours. When begun not later than the third to the fifth day, it often abbreviated the course materially and in practically all cases improvement was the rule. The stimulating effect rendered camphor, etc., unnecessary. The turpentine seems to promote oxidations, and this combats the typhus virus and its products, and promotes repair in the tissues. By setting the turpentine in the sun for an hour or two it became ozonized, and this enhanced its oxidating power. His attention was first attracted to turpentine by the sedative, tranquillizing influence of a turpentine fixation abscess in some cases, this tranquillizing action resembling that induced by a supply of fresh air.

Sept. 4, 1921, 17, No. 36

*Treatment of Secondary Syphilis. A. Brandweiner.—p. 1075.
*Deep Roentgen Ray Treatment of Internal Diseases. H. Böge.—p. 1080.
*Fatalities After Arsphenamin Treatment. L. Sussig.—p. 1082.
*Prevention of Trismus with Tetanus. E. Moser.—p. 1084.
War Nephritis. H. v. Hecker.—p. 1085.
*Intussusception in Children. W. Wortmann.—p. 1087.
Umbilical Cord Too Short to Allow Delivery. Wittneben.—p. 1091.
*Simple Acetone Test. R. Scharf.—p. 1091.
Vomiting in Children. K. Blühdorn.—p. 1092.

Treatment of Syphilis.—Brandweiner tabulated the details of 9,158 cases of syphilis in treatment at a Vienna reserve hospital during the war, and here gives similar data of the 425 among them that presented further symptoms later. His tables show that none of those given arsphenamin in large amounts during the first course have presented any symptoms since. The secondary cases were all in those given the smaller amounts. In 341 of the 425 secondary cases, the infection was of less than eight months' standing. The data presented apparently testify that to be effectual each course of treatment of a secondary case must consist of 25 or, better yet, 30 doses of neo-arsphenamin, equivalent to 3.75 to 4.5 gm. provided that the Wassermann reaction veers to negative in the course of the treatment. If not, then more of the drug or another arsenical should be given, strictly individualizing. He precedes the arsenical of the first course with five or ten mercurial inunctions to avert too strong a reaction. The associated course of mercury should consist of at least 40 to 50 inunctions at 4 gm. or 25 to 30 injections. The intervals between the courses should be from four to six weeks, never over two months. Three courses may suffice if there are no further symptoms. He advises to apply the Wassermann test at each injection of the arsenical. If at the second or third course any symptoms are noted, even the slightest trace of a Wassermann reaction, two more courses at least must be given. These directions apply only to infection of less than a year's standing; in the old cases it is often impossible to banish the Wassermann reaction permanently.

Deep Roentgen-Ray Treatment in Internal Medicine.—Böge reports favorable experiences with deep roentgenotherapy in all forms of tuberculosis, lung tumors, leukemia, neuralgia, pernicious anemia and splenomegaly. He has been working in this line for over two years, and urges others to enter this new field, as the results to date are certainly promising. In 17 cases of pulmonary tuberculosis permanent improvement in the local process and general condition was obtained in 15; a complete cure was realized in 28 of 32 cases of tuberculous glands, the course of treatment ranging from three to seventeen months. In 7 cases of a tuberculous process in a rib, 5 were completely cured, as also 3 of 8 cases of tuberculous peritonitis. In 4 cases of myeloid leukemia one has been cured for two years; chronic leukemia has to be kept under treatment for years. He does not enter into details further, reserving this for a later communication, but mentions that the treatment seemed to be an effectual adjuvant to arsphenamin in his pernicious anemia cases.

Fatality Under Arsphenamin.—Sussig remarks that as the cause for the deaths under arsphenamin is still obscure, it is important to report all such fatalities in detail for comparison. He describes a case of the kind in a woman of 30 with positive Wassermann reaction who had had typhoid and acute articular rheumatism and erysipelas during the preceding year. A chill followed the third injection of 0.3 gm. neo-arsphenamin, then fever of 104 F., coma and tremor, with death the sixth day. Necropsy revealed hemorrhagic encephalitis, with punctate hemorrhages through the white substance of each hemisphere and the left striatum. No spirochetes could be found in the brain or other organs but a streptococcus was in the spleen. This streptococcus was evidently responsible for the verrucous endocarditis and acute glomerular nephritis. The latter may have rendered the patient more susceptible to the action of the arsenical.

Prevention of Trismus in Tetanus.—Moser reports what he says was such brilliant success in a case of severe tetanus that he does not wait for further confirmation, but calls attention at once to the way in which he combated the tetanic closure of the jaw muscles by injecting locally an anesthetic as if for local anesthesia. The tetanus had developed the twenty-second day after the man's hand had been crushed in a machine. The second day of the trismus, Moser injected 25 c.c. of a 0.5 per cent. solution of procain (novocain), distributed in both masseters. In a few minutes the previously tightly locked teeth could be opened, and the man could eat and drink at will which had been absolutely impossible before. The effect began to subside in an hour, and by the afternoon the teeth were clenched as tightly together as before. At 5 p. m. another similar injection was made, this time above the malar bone, pointing the needle downward in three different directions. The effect was prompt and as decided as at first, and the patient was able to eat and drink. Two local injections were required on the four following days. As the effect of the local anesthetic lasted only for an hour by that time, a change was made to eucain. The effect of this was less prompt but it lasted longer; one injection in the morning answered for the whole day. The patient could even chew bread, but the muscles were still rigid throughout the body, with intense spasms in the limbs. By the nineteenth day the local anesthetic was no longer needed. He had been given twenty injections of antiserum 100 units each, and also morphin, phenobarbital and camphor at times. The extreme severity of this case conflicts with the general assumption that the disease is milder the longer the incubation. The favorable outcome seems to have been due to the possibility of giving ample nourishment and cleaning out the mouth. When it was first opened, thrush was found. In a second case the local anesthetic conquered the trismus at once in the same way, but the boy of 12 could take nothing but fluids on account of the spasm of the swallowing muscles. He succumbed the second day to paralysis of respiration.

Intestinal Invagination in Children.—Wortmann advises immediate operative treatment for children of 18 months or 2 years and over. For infants, he manipulates the bowel from without, in profound general anesthesia, applying the same Hutchinson procedure through the abdominal walls as in older children through a laparotomy opening. High enemas at the same time, the pelvis raised, are a potent aid, as also holding the child with its head down and shaking it a little, especially when the invaginatum is deep in the rectum or there is prolapse. If the invagination cannot be reduced in ten or fifteen minutes by these procedures, the operation should follow at once.

Test for Acetone in the Urine.—Scharf has worked out a simple method for quantitative determination of acetone in the urine: To 5 c.c. of the urine are added 5 drops of a saturated solution of sodium nitroprussid and then 1 c.c. of a 15 per cent. solution of sodium hydroxid. The fluid turns red and then a dark dregs-of-wine color as the fluid is at once neutralized by adding a few drops of concentrated acetic acid, and this tint persists for ten minutes. The test is then repeated with the urine diluted to 1:10. If the dregs-of-wine color fades out before three minutes, there is less than 0.05 per cent. acetone in the fluid. The test is then repeated with dilutions of 1:5; 1:8, etc. If the tint fades out at 1:8 after three minutes while this does not occur until the fifth minute with the 1:6 dilution, then the 1:8 dilution is the proper one. The formula is the product of the dilution figure and the acetone figure of 0.05. In this case it would be $8 \times 0.05 = 0.4$. Assuming the daily output to be 1,000 c.c. the acetone content would be 4 c.c. or 3.2 gm.

Münchener medizinische Wochenschrift, Munich

Aug. 26, 1921, 68, No. 34

What is Inflammation? A. Dietrich.—p. 1071.
*Sexual Intercourse During Pregnancy. Carl Ruge, Jr.—p. 1072.
Incidence of Carcinoma of the Uterus. E. Zweifel.—p. 1076.
Lung Edema. R. Geigel.—p. 1078.
Recoil of the Heart. R. Geigel.—p. 1079.
Calciuria. K. M. Hasselmann.—p. 1080.
Recent Views as to Treatment in Eclampsia. Hinselmann.—p. 1080.
Intraperitoneal Infusions. Backes.—p. 1082.
Aluminum Oleate. W. Wiechowski.—p. 1082.
*Parathyroid Grafts in Paralysis Agitans. W. Kühl.—p. 1083.
Treatment of Roentgen and Radium Ulcer. L. Kumer.—p. 1084.
Treatment of Paresis. W. Fuchs.—p. 1084.
"An Invisible Phase of Pathogenic Protozoa." F. K. Kleine.—p. 1085.
"Occultism." A Reply. T. K. Oesterreich.—p. 1085.
Treatment of Wound Infections of Physicians. A. Bier.—p. 1087.
Indications for Early Operation in Appendicitis. A. Krecke.—p. 1090.

Sexual Intercourse During Pregnancy.—Ruge reports the results of his inquiry into the sexual habits of married couples during the pregnancy of the wife. Seemingly reliable information was secured from 410 puerperants in the Universitäts-Frauenklinik, Berlin. Among many peoples of antiquity, sexual intercourse with pregnant women was absolutely prohibited by religious laws, and violations were severely punished. Among many "uncivilized" tribes of today the same is true. In civilized nations of the present, however, there is great diversity of opinion on the subject. Even physicians entertain widely different views. While some (Bumm, for example) prohibit all intercourse throughout the entire period of pregnancy, others, and probably the majority, regard moderate intercourse during the first half of pregnancy as harmless, but demand total continence for the later months—some insisting on four months, some on two months, some on only from two to four weeks' rest for the wife before term.

The results secured by Ruge's inquiry were surprising. Complete continence during pregnancy was not found even once in the 410 cases. Not less than 322 women (78.5 per cent.) had sexual relations during the last two months before confinement, and 53.9 per cent. during the last four weeks; during the last week, 31 per cent.; during the last three days, 20 per cent., and on the day of delivery, 39 (9.5 per cent.). The frequency of cohabitation was also startling, 60 per cent. having had intercourse two or more times a week, and 24.6 per cent. three and more times weekly. More startling still was the confession of 24 women (5.9 per cent.) that intercourse occurred daily, while 6 even admitted that it occurred several times a day and stated that they rarely ever felt other than well. Nevertheless, Ruge was able to discover evidence of injury to the mother or the child from cohabitation during the last months of pregnancy; for instance, premature rupture of the fetal membranes, hemorrhages, premature births, and fever during and after birth. Of the 82 women who had had intercourse during the last three days before delivery, 17 per cent. had high temperatures lasting from several days to several weeks. In fact, one woman had to undergo cesarean section and for a long time was in a very critical condition, though she was able to leave the hospital cured at the end of three months. Ruge recommends, incidentally, a vegetable diet, in the main, during the last half of pregnancy, saying that it lessens materially the danger of eclampsia.

Transplantation of Parathyroid Glands for Paralysis Agitans.—Kühl chose for his experiment a typical case of paralysis agitans, which had been observed as such in the Altona hospital, from January to April, 1921. He removed from two anesthetized calves, before they were slaughtered, in an aseptic manner, the parathyroid glands, which were placed in a warm, physiologic sodium chlorid solution. A quarter of an hour later he transferred them to the patient, embedding them under the abdominal skin at two different points. The result was so surprising that uninitiated neighbors of the patient inquired, on the tenth day thereafter, what had happened. Retropulsion was no longer observed after the eighth day; likewise, dragging of the feet in walking had almost disappeared; it was also noticeable that the play of the features was more normal. After the fifteenth day the man could lie down on the ground and rise unassisted, whereas before the operation he had always to be lifted out of bed. He could also fold his arms across his chest; could now feed himself, and he was able to spread out his fingers, whereas he had kept them either closed or stiffly extended. He was now able to write for the first time in three years. Kühl thinks the results prove that muscular rigidity in paralysis agitans rests on a hypofunctioning of the parathyroid glands.

Wiener klinische Wochenschrift, Vienna

Aug. 25, 1921, **34**, No. 34

Time and Route of Tuberculosis Infection. H. Wassing.—p. 411.
Endemic Autumnal Erythema in Rural Region. K. Toldt.—p. 412.
Clinical Aspects of the Climacteric. Jagic and Spengler.—p. 412.
Necrosis after Subcutaneous Injection of Quinin. Neumann.—p. 414.
Weather in Relation to Disease. M. Kahane.—p. 414.
Reforms in Land Tax and the Land Problem. Thausing.—p. 415.
Experiences with Pregl's Iodin Solution. E. Knauer and H. Zacherl.—p. 416. Begun in No. 33, p. 399.

Zentralblatt für Chirurgie, Leipzig

Aug. 27, 1921, **48**, No. 34

*Capping the Cystic Duct Stump. H. Burckhardt.—p. 1230.
Foreign Bodies in the Lung. W. Jehn.—p. 1232.
Fall of Blood Pressure Through Blocking of Splanchnic Nerve. N. G. Bouma.—p. 1236.
One-Stage Plastic Reconstruction of the Upper Eyelid Together with Muscle Fibers and Eyelashes. R. Kaz.—p. 1239.

The Ligamentum Teres as Covering for the Cystic Duct.—Burckhardt found that covering the cystic duct stump after cholecystectomy with whatever material the hepatoduodenal ligament furnished did not always afford adequate protection. Of late he has been using the round ligament as covering. The round ligament is easily applied, its use causes no particular disturbances, and especially no displacement of the abdominal organs. He has used the method so far in only four cases, but in all these the result has been excellent.

Zentralblatt für innere Medizin, Leipzig

Aug. 27, 1921, **42**, No. 34

*Blood Findings in Pernicious Anemia. A. Flater.—p. 674.

The Significance of the Blood Findings for the Course of Pernicious Anemia.—Flater cites a case to show that we are not justified in basing our prognosis solely on results of the blood examination. In the reported fatal case in a man of 63 there was a marked incongruity between the blood picture and the intensity of the disease, since at death the hemoglobin content was still 58 per cent. and the erythrocyte count 2,600,000. Usually, death results in pernicious anemia only when the blood picture falls below the point at which life can be maintained.

Hygiea, Stockholm

Sept. 30, 1921, **83**, No. 18

*Institutional Care of the Tuberculous. E. Lindhagen.—p. 593.
Treatment of Oxyuriasis. H. Kjerrulf.—p. 603.

Care of the Tuberculous.—Lindhagen asks how the care of the tuberculous in institutions can be most suitably organized. Sweden now has seventy-seven institutions for the adult tuberculous, with a total of 5,382 beds. Omitting private institutions for the well to do, there are seventy-three with 5,069 beds, and 70 per cent. of these are in the larger sanatoriums. In Norway, the tendency has been the reverse, the majority of the beds being scattered in the smaller sanatoriums. He does not approve of this tendency, saying that the present financial depression is a transient phenomenon, and it is not wise to put up with makeshifts which will not serve later after this temporary period of stringency is past.

Svenska Läkaresällskapets Handlingar, Stockholm

Sept. 30, 1921, **47**, No. 3

Physical Development of Schoolchildren in Sweden During and Since the War. H. Kjerrulf.—p. 67.
*The Physician's Fees in the Hammurabi Code. V. Djurberg.—p. 81.

The World's Oldest Medical Code.—Djurberg describes the Babylonian code dating from approximately 2250 to 2081 B. C., which regulated the remuneration of physicians. It was described in detail in THE JOURNAL several years ago, and a few of the more important regulations were mentioned in THE JOURNAL, Oct. 17, 1914, p. 1390.

Ugeskrift for Læger, Copenhagen

Oct. 6, 1921, **83**, No. 40

*Etiology of Habitual Constipation. T. E. Hess Thaysen.—p. 1281

Etiology of Chronic Constipation.—Thaysen now has a record of 200 women and 175 men with habitual constipation, and his charts of these cases show that in 86.5 per cent. of the women and in 72.5 per cent. of the men the habitual constipation became installed before the age of 26; in 31.5 per cent. of the women before the age of 10, and in 11.5 per cent. between 10 and 15. In both men and women, the onset was between 15 and 20 in very nearly 30 per cent. These figures confirm, he declares, the importance of a constitutional predisposition, with puberty as the occasional factor. With the constipation accompanying gastric ulcer, from reflex action, the age proportions are just the reverse: The proportion begins to increase progressively after the age of 25 and reaches its highest figure at 45. Reflex constipation thus behaves entirely different from the constitutional.